BY ORDER OF THE COMMANDER,
436TH AIRLIFT WING

DOVER AIR FORCE BASE
INSTRUCTION 32-2001

14 APRIL 2004

Civil Engineering

FIRE PROTECTION OPERATIONS AND FIRE PREVENTION PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the AFDPO WWW site at: **http://www.e-publishing.af.mil.**

OPR: 436 CES/CEF (Mr. Morris)

Certified by: 436 CES/CC (Lt Col Nonaka)
Pages: 77
Distribution: F

This instruction aligns with Air Force Policy Directive (AFPD) 32-20, *Fire Protection* and implements Air Force Instruction (AFI) 32-2001, *The Fire Protection Operations and Fire Prevention Program*. It establishes policies, practices and procedures for a comprehensive fire protection program at Dover Air Force Base (DAFB). It applies to all personnel assigned or attached to units at Dover AFB, to include all tenant organizations. It assigns responsibilities for fire prevention and protection and establishes a recognized standard practice for safeguarding life and property from the ravages of fire. Failure to prevent fires could seriously hamper mission accomplishment here and at other bases worldwide. Therefore, it is essential that all personnel, military and civilian, maintain constant vigilance to prevent needless loss of life and property to fire. This regulation is based upon the standards of the Air Force Occupational Safety and Health (AFOSH) standards; National Fire Protection Association (NFPA) standards; Unified Facilities Criteria 3-600-01, Design: Fire Protection Engineering for Facilities; Engineering Technical Letters; and the Uniform Building Code (UBC). Refer to previously listed publications for standards not addressed in this instruction. Standards for unique conditions for which no fire prevention criteria have been developed or published will be developed according to the recommendation of the Dover AFB Fire Department.

1. Administration and Enforcement.

1.1. **Purpose:** This instruction defines policies and responsibilities, and sets standards and procedures for fire prevention and protection as a facility engineering function. It establishes minimum fire prevention measures for fire protection services to prevent loss of life or personal injuries and reduce property loss to the lowest attainable level consistent with mission, sound engineering and economic principles.

1.2. **Authority:**

1.2.1. This office is directed under the Dover AFB Instruction (DAFBI) 32-2001, *The Fire Protection Operations and Fire Prevention Program*.

1.2.2. The authority having jurisdiction is authorized to inspect at all reasonable times, any building or premises for dangerous or hazardous conditions or materials as set forth in this standard. The authority having jurisdiction will inform any person(s) failing to comply with this standard that they are in violation. All violations will be recorded in writing and the reference standard noted.

1.2.3. For facility fire protection engineering issues, the Engineering Flight Chief, will coordinate with the Fire Chief, and submit proposed waivers, exceptions, alterations, and interpretation requests through the major command fire protection office to HQ AFCESA/CESM.

1.3. **Objective:** The main fire prevention and protection objective is to eliminate the causes of fire and reduce loss of life, injuries and property damage. In order to prevent or to reduce loss of life from fire, commanders, facility/building managers, supervisors and all military and civilian personnel must take adequate measures to prevent and eliminate all fires. Loss of life due to poor fire prevention can never be condoned. The loss of government property will result in an unnecessary use of funds and costly delays that will seriously hinder our national defense efforts. Since the most effective means of reducing fire-loss is an aggressive and well-managed fire prevention program, all personnel assigned or attached to Dover AFB, including representatives under contract to/or acting for the Air Force, will adhere to all provisions of this regulation.

1.4. **Fire Prevention and Protection Program:**

1.4.1. Every Air Force activity will have a fire prevention and protection program based on its size, mission and available resources.

1.4.2. Commander's Role: The most critical ingredient in an effective fire prevention and protection program is the commander's awareness and involvement. Commanders have the fire protection resources to do the job. However, without the commanders' involvement and support, the program could fail regardless of the resources applied. Preserving life and property is a fundamental duty of all levels of command and supervision.

1.4.3. Fire Inspection Program: Fire department inspectors perform facility inspections and advise unit commanders, and facility/building managers, and supervisors of hazards and fire safety deficiencies noted in their facilities. The primary responsibility for correcting identified hazards or deficiencies rests with the unit commander or facility/building manager of the unit or facility inspected.

1.4.4. Fire department inspectors will conduct facilities inspection according to AFI 32-2001, as determined by the Base Fire Chief.

1.5. **Fire Prevention Education:** The Fire Prevention Section of the Base Fire Department is available to present fire prevention lectures and demonstrations. To request training, submit a letter requesting the type of training required, times, dates and the number of people to be trained or call the Fire Prevention Section.

1.5.1. The Dover AFB Fire Prevention Section provides the following public educational courses:

1.5.1.1. Facility/Building Managers Fire Safety Program.

1.5.1.2. Family Housing Safety Briefing every Thursday at 0830.

1.5.1.3. Portable Fire Extinguisher training every Friday at 0830 hours.

1.5.1.4. Child Care Providers Fire Safety Program.

1.5.1.5. Contractor Fire Safety Briefing.

1.5.1.6. There are additional courses available through the State of Delaware Fire Commission that can be coordinated for use on base.

1.5.2. To request the above training, submit a letter or call the Fire Prevention Section requesting the training you desire. Include date, time, location, point of contact and phone number.

1.5.3. To ensure all attendees get the full benefit of the training, the class size shall not exceed 20 attendees. Some of the courses require students to participate in hands-on training.

1.5.4. The Fire Prevention Section promotes National Fire Prevention Week held the second week of October. During this week, Sparky the Fire Dog will visit schools and various complexes to promote fire prevention.

1.6. **Fire Protection Engineering Program:**

1.6.1. All facilities and structures on base shall be designed with fire safety features in accordance with the Unified Facilities Criteria (UFC) 3-600-01, AFOSH Standards, National Fire Protection Association (NFPA) Standards and the Uniform Building Codes (UBC). Before new construction or modifications to any facility, the Fire Prevention Section reviews the design plans to ensure that life safety issues and fire protection features are in place. This includes Non-Appropriated Funds (NAF), Army and Air Force Exchange Services (AAFES) and self-help projects. Construction, alterations and renovation projects shall be coordinated with the Civil Engineer and Fire Prevention and Protection Division before bid advertising or authorization to proceed with construction.

1.6.2. Alterations, modifications or self-help projects must be coordinated with the Fire Prevention Section located in Building 510 (Fire Station #1). Document all work on an AF Form 332, **Base Civil Engineer Work Request**, and submitted through proper channels. Attach structural or facility design change drawings to the AF Form 332.

1.6.3. Work orders for correction of Fire Safety Deficiencies (FSD) must have a FSD Letter signed by a fire prevention inspector. Attach this letter to the AF Form 332 when forwarding.

1.7. **Construction Requirements, Alterations, Modifications and Terms:**

1.7.1. Ensure all construction on Dover AFB complies with the provisions of all applicable National Fire Protection Standards (NFPA), International Building Code (IBC), Air Force Occupation Heath Instructions, appropriate Technical Orders, and requirements within the Unified

Facilities Criteria (UFC) 3-600-01. This applies to new construction, reconstruction, rehabilitation, alterations, modifications, self-help projects and maintenance or repair of existing facilities.

1.7.2. Buildings or portions of buildings may be occupied during construction, repair, alterations or additions only if all means of egress and all fire protection features are in place and continuously maintained for the section occupied. The Base Fire Chief or designated representative must approve occupancy.

1.7.3. Existing facilities, which are acceptable to the authority having jurisdiction, and meet the requirements of NFPA Standard 101, *Life Safety Code*, for existing occupancies, do not have to be modified to new occupancy criteria except if there is a major renovation of the facility or occupancy change.

1.7.4. Installation of interior finish materials as a part of change, alteration, of modernization projects and movable partitions, shall be IAW UFC 3-600-01 criteria and NFPA Standards.

1.7.5. Notify installation Fire Protection personnel in writing of all pre-construction conferences, pre-final inspections and final inspections.

1.8. **Change of Occupancy:**

1.8.1. A building or structure in original condition, under modification or only changing one occupancy sub-classification for another sub-classification for the same occupancy, shall conform with the requirements of UFC 3-600-01, UBC and the NFPA Standards applying to new construction, for the proposed new use.

1.8.2. The Civil Engineer Real Estate Office will forward requests for occupancy change to the Fire Prevention Office for review and guidance pertaining to code requirements for the change in occupancy. The Fire Prevention Office will provide a report if, or when, the change requires upgrade to meet code requirements.

1.9. **Notification of Public Gatherings:**

1.9.1. Notify the Base Fire Prevention Office before planning any assembly of 50 people or more in a facility not specifically designed as a place of assembly. This is to ensure that all requirements outlined in NFPA 101 are met and the event is conducted safely.

1.9.2. Due to the varying configuration of furniture and equipment within cafeterias, hangars and other facilities, review each plan individually.

2. Responsibilities.

2.1. **Organizational Commanders:**

2.1.1. The Base Fire Marshal (Installation Fire Marshal) is responsible to the Wing Commander for fire prevention and fire protection on the installation. Fire suppression operations, facilities engineering and technical development programs are included in providing an effective fire prevention and protection program for the entire installation or other support activities.

2.1.2. Organizational commanders are responsible for the fire prevention program in their areas of responsibility. Commanders shall appoint, in writing, the facility/building manager to assist in the performance of this duty. Personnel appointed as facility/building managers shall attend a Facility/Building Managers Fire Safety briefing.

2.1.3. The organizational commander or designated representative, shall enter the necessary corrective action(s) on AF Form 1487, **Fire Prevention Visit Report**, and return the form to the Fire Prevention Office noting action taken to correct the problem. Maintain the form until correction of the fire deficiency.

2.1.4. Initiate appropriate administrative or disciplinary action when there is willful misconduct or negligence involving the damage of, or tampering with, fire protection devices and equipment.

2.1.5. Ensure that all assigned personnel are knowledgeable of fire reporting procedures, personnel evacuation, first aid, fire prevention measures and fire extinguisher use.

2.2. **Facility/Building Managers:**

2.2.1. New facility/building managers will be required to attend a Facility/Building Facility Manager briefing. Schedule this training through the Civil Engineer Operations Flight, Customer Service.

2.2.2. Conduct a monthly walk-through inspection. Facility/Building Managers are to utilize the monthly fire prevention checklist in Appendix A. Facility/Building Managers can find additional checklists in AFOSH regulations.

2.2.3. Maintain all fire extinguishers in a ready-to-use condition, are inspected monthly for serviceability and ensure completion annual fire extinguisher serviceability checks.

2.2.4. Ensure all personnel in their facilities are trained in fire prevention practices, become familiar with fire reporting procedures, building evacuation, first aid and firefighting.

2.2.5. Post emergency contact names and phone numbers at the main entrance of all buildings within their responsibility.

2.2.6. Ensure all buildings within their responsibility are numbered and the numbers are visible from the road.

2.2.7. Accompany inspectors during fire inspections by the Fire Prevention Office. At the end of the inspection, the inspector shall brief the manager on all fire hazards or deficiencies noted and the corrective action required.

2.2.8. Make every effort to correct identified hazards/deficiencies at the time of the inspection.

2.2.8.1. AF Form 1487 is used to record fire safety hazards or deficiencies not corrected on the spot. Instructions for completing the form are on the reverse side of the form and return form by the suspense date. Route AF Form 1487 through the Installation Commander if the responsible official fails to support the Base Fire Prevention Program.

2.2.8.2. Take interim corrective action as appropriate on all identified items that cannot be corrected by the suspense date. Use AF Form 332 to correct deficiencies that are beyond the capability of the building occupants/organization. The facility manager is responsible for submitting and tracking the work order status.

2.2.9. Facility/Building Managers shall report to their commanders or supervisors for appropriate action for any person(s) causing damage by fire as a result of failure to comply with the provisions of this instruction, acts of negligence or carelessness and for the transmission of false alarms or cause of such by any attempt to alter or damage the function of fire detection and/or protective systems.

2.2.10. The Facility/Building Manager shall maintain a fire prevention folder or automated file. Items contained in the folder or automated file shall include:

Copies of completed monthly fire prevention checklists

Issued AF Form 1487's and attached AF Form 332's submitted to correct deficiencies

The Facility Fire Action Plan (OSHA Requirement)

Monthly extinguisher inspections

Approval letters including smoking areas flammable storage lockers explosive licenses

Fire prevention training records

This folder will be on file for the fire inspector's review

2.2.11. Special Event Procedures: The Facility/Building Manager will notify the Fire Department when planning special events, to include seating arrangements, temporary decorations, exceptionally large crowds or any unusual activities.

2.2.11.1. Do not obstruct aisles with temporary or portable seating, ticket booths, etc.

2.2.11.2. Check exit doors for proper operation before opening the facility.

2.2.12. Ensure fire protection systems are not tampered or interfered with. Immediately report problems with any of the systems that are not of an emergency nature to CEO, Customer Services.

2.2.12.1. Maintain a clear space around all sprinkler riser areas, cages and rooms so system maintenance can be performed. This is to include access for dry chemical, carbon dioxide and Halon suppression systems.

2.2.12.2. Ensure all fire lanes, access roads, and outdoor fire department connections are clear for fire department access at all times.

2.2.13. Facility Manager will ensure all keys or access codes to all rooms are secured in the "Knox Box" located outside the facility. Coordinate with the fire department to place required facility access devices in the "Knox Box".

2.3. **Supervisors and Employees:**

2.3.1. Supervisors and employees in each work area are responsible for ensuring their place of work is free of fire hazards. Eliminate all hazards and deficiencies immediately or report up to a level for corrective action.

2.3.2. Situations where hazardous conditions pose an imminent threat to life and or property, the supervisor of the operation must take prompt action to reduce or eliminate the hazard, or cease operations and withdraw exposed personnel to safety.

2.4. **Union Representatives:**

2.4.1. A union representatives may accompany the Fire Inspector and Facility/Building Manager during a workplace inspection.

2.5. **Military Family Housing (MFH) Sponsors:**

2.5.1. Sponsors are responsible for fire prevention in their quarters.

2.5.2. Sponsors must ensure their dependents are aware of and practice sound fire prevention procedures.

2.5.3. MFH occupants shall receive a fire prevention orientation within five business days of occupancy. Family housing briefings are conducted every Thursday at 0830 at Bldg. 510 (Fire Station #1).

2.5.4. The Base Housing Officer will schedule housing occupants for the fire safety briefing. The sponsor must be present for this orientation. Dependents are strongly encouraged to attend.

2.6. **Contractors:**

2.6.1. All contractors performing work on properties under jurisdiction of this command shall be responsible for fire safety and compliance with all Air Force, AMC, OSHA, CFR, and base regulations and directives.

2.6.2. The supervisor shall attend a contractor's briefing on fire safety prior to any work. This is normally conducted at the pre-construction meeting.

2.6.3. Supervisors brief all personnel under their direction on fire prevention practices in accordance with this instruction.

2.6.4. Post fire reporting procedures and emergency phone numbers in a conspicuous location.

2.7. **Security Forces:**

2.7.1. The Security Forces desk shall dispatch patrols to the incident scene to provide traffic control, and security of government property.

2.7.2. When requested, assist the Installation Fire Chief or authorized representative in fire investigation.

3. Emergency Reporting Actions.

3.1. **Responsibility:**

3.1.1. It is the duty of each individual who discovers a fire or emergency to notify the Base Fire Department by the quickest means available, even if the fire has already been extinguished.

3.1.2. **911** is the emergency phone number for Fire, Police or Ambulance on Dover AFB. All telephones are required to have Fire/Police/Ambulance emergency stickers affixed in plain view.

3.1.3. False Alarms: Take appropriate action against any person who willfully makes a false alarm. Persons with information regarding a false alarm should provide it to the Security Forces or Base Fire Department.

3.2. **Procedures in Case of Fire:**

3.2.1. Alert facility occupants of the fire by activating the nearest fire alarm pull station to evacuate the facility. Activating the fire alarm system also notifies the Fire Department Alarm Center. It is still required to call the Fire Department after activating the alarm.

3.2.2. Facility/Building Manager shall designate meeting places in the Facility Fire Action Plan. Highly recommend a list or number of occupants, for accountability, be on hand from the Facility Manager or shop supervisor.

3.2.3. Notify the Fire Department by dialing **911**

NOTE: Phone from a safe location!

3.2.3.1. Provide the following information to the Fire Alarm Communications Center (FACC) when reporting a fire:

Location of the fire: Give the building number the street name and the location of the fire if in a facility.

What is on fire?

Injuries or persons trapped that are not accounted for.

Name and grade of person reporting the fire and call back phone number.

Do not hang up until the FACC Dispatcher tells you to do so.

3.2.4. Only attempt to use a portable fire extinguisher if properly trained.

3.2.5. After reporting a fire, wait outside or designate a person to meet emergency crews to the emergency location as they arrive on scene.

3.2.6. Once out of the building/house, go to a designated safe place. Do not go back in for any reason.

3.2.7. If your clothes catch on fire, STOP, cover your eyes with your hands, DROP, and ROLL until the flames go out. Do not get up and run.

3.3. **Fire Apparatus Response Procedures and Scene Safety:**

3.3.1. Fire department vehicles will have the right of way at all intersections, stop signs and thoroughfares while on emergency response.

3.3.1.1. All drivers noting the approach of responding emergency vehicles, hearing sirens or observing warning lights, will pull over to the right, or curbside, stop, and remain stopped until all emergency vehicles have passed.

3.3.1.2. Vehicles will not pass, or attempt to pass, any piece of fire apparatus that is responding to an emergency.

3.3.1.3. Vehicles will not follow closer than 500 feet behind emergency vehicles.

3.3.2. All spectators or other personnel not directly involved in emergency operations, must stay clear of the scene and not interfere with emergency operations.

4. Fire Extinguisher, Detection and Suppression Fire Systems and Hydrants.

4.1. **Fire Extinguishers:**

4.1.1. Placement Requirements:

4.1.1.1. The Fire Prevention Office shall provide advice on type and placement of extinguishers to comply with NFPA 10*, Portable Fire Extinguishers*.

4.1.1.2. Normally, a fire extinguisher must be within a 50-foot travel distance from any point in a non-sprinklered facility and 75 feet in a sprinklered facility.

4.1.1.3. Distribute fire extinguishers throughout the protected area so that they are unob-

structed, readily accessible and located in the normal path of egress from the area.

4.1.2. Installation of Facility Fire Extinguishers:

4.1.2.1. Install fire extinguishers in cabinets as part of construction projects in accordance with UFC 3-600-01 and NFPA 10.

4.1.2.2. Install fire extinguishers having a gross weight not exceeding 40 pounds so that the top of the fire extinguisher is no more than five feet above the floor. Install fire extinguishers having a gross weight greater than 40 pounds (except wheeled type) so that the top of the extinguisher is no more than three and one half feet above the floor. The clearance between the extinguisher and the floor shall not be less than four inches.

4.1.2.3. Where fire extinguisher cabinets are not provided, there shall be suitable hangers or supports for the extinguishers. Fire extinguisher cabinets shall be required for all facilities when remodeled or renovated except industrial or shop areas.

4.1.2.4. Do not relocate, install, or remove fire extinguishers from their assigned locations without the approval of the Fire Prevention Section.

4.1.3. Fire Extinguisher Purchase and Maintenance:

4.1.3.1. Fire extinguishers are the property of the Facility Manager once they are installed in a new or renovated facility.

4.1.3.2. Funding for new extinguishers is the responsibility of the using organization.

4.1.3.3. Visually inspect fire extinguishers monthly IAW NFPA 10. Attach annual service tags to all fire extinguishers. Facility/Building Managers shall keep a monthly inspection log or annotate monthly inspections on the annual service tag.

4.1.3.4. Fire extinguisher hydrostatic testing, annual inspection, servicing and maintenance are accomplished by contract. Fire extinguishers that have been discharged or partially discharged for any reason must be recharged or replaced. Temporary loan extinguishers are available from the Base Fire Department.

4.1.3.5. Fire extinguishers will be numbered with a base ID number. The extinguisher ID number shall have the facility number first, followed by the extinguisher number.

4.1.4. Flight line fire extinguishers (150 lb. Halon 1211) are designated for the protection of aircraft and other specific aircraft related applications only. Place extinguishers according to guidelines in T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding* (C-5 aircraft require two (2) 150 lb. Halon 1211 extinguishers per aircraft).

4.1.4.1. User organizations are responsible for moving flight line fire extinguishers from established pickup points to the location requiring the extinguisher.

4.1.4.2. CRS Mobility Manager will account for all 150 lb. Halon extinguishers assigned for deployment. Red handles identify mobility extinguishers. Do not use other flight line extinguishers for mobility purposes unless cleared by the Base Fire Department.

4.1.4.3. The Base Fire Department services flight line extinguishers. Take extinguishers needing repair to Bldg. 510.

4.2. **Installed Fire Suppression and Detection Systems:**

4.2.1. General:

4.2.1.1. Do not block or impede access to fire alarm enunciator panels, suppression system control valves, hose stations etc.

4.2.1.2. Bushes, fences or other obstacles will not hide, block or obstruct access to Fire Department Connections or Post Indicator Valves.

EXCEPTION: The Facility/Building Manager will provide five (5) current duplicate entry keys where locked gates prevent immediate access to Fire Department Connections due to security reasons.

4.2.1.3. Do not shut off fire detection and suppression systems that operate during an actual fire except upon direction by the Senior Fire Officer.

4.2.1.4. Notify the Base Fire Department immediately when any fire suppression or detection system is out of service for any reason.

4.2.1.5. Maintenance and Testing: Authorized personnel will accomplish all work. This will include CE Craftsmen, Contractors or Base Fire Department personnel. Fire systems which malfunction due to mechanical malfunction, damage or other non-fire related causes, shall be shut off by Base Fire Department personnel as soon as it is determined that no fire exists.

4.2.1.6. Tampering with Fire Protection Equipment or Systems: Any individual who tampers with fire protection systems is subject to disciplinary action under the Uniformed Code of Military Justice (UCMJ) or applicable civilian directives.

4.2.2. Fire Suppression Systems:

4.2.2.1. Installation Compliance: Install any sprinkler, deluge, standpipe, hood and duct, etc., IAW UFC 3-600-01 and the NFPA Standards.

4.2.2.2. Facility Renovations: Modification projects in buildings with sprinkler systems shall include provisions for rearranging the sprinkler system as necessary for compliance with NFPA Standard 13, *Installation of Sprinkler Systems*. Any modifications to a sprinkler system require recalculation and approval by a certified fire protection engineer (UFC 3-600-01).

4.2.2.3. Do not paint, cover, or obstruct sprinkler heads in any way which blocks the intended sprinkler coverage area.

EXCEPTION: In special circumstances, during painting or renovation work, allow covering of sprinkler heads only if there is prior coordination and approval of the Base Fire Prevention Office.

4.2.2.4. Keep storage at least 18 inches below all sprinkler heads and/or piping.

4.2.2.5. Paint sprinkler system components (except sprinkler heads) stand pipes, and post indicator valves red for easy identification of the system or label as directed by NFPA 13.

4.2.3. Fire Detection and Alarm Systems:

4.2.3.1. Installation: Fire alarm and signaling systems shall comply with UFC 3-600-01, NFPA Standard 72, *National Fire Alarm Code* and applicable engineer technical letters.

4.2.3.2. Facility Renovations: Modification projects in buildings with sprinkler systems shall include provisions for rearranging the detection system as necessary for compliance with

NFPA 72.

4.2.3.3. Only Base Fire Department or Civil Engineer personnel shall be authorized to reset activated fire alarm systems.

4.2.3.4. Do not disconnect, pulled down, or tape over smoke or heat detectors at any time.

4.2.4. Fire System Outage Procedures: Facility/Building Managers shall implement the following procedures in the event of fire detection, fire suppression or fire notification system failure:

4.2.4.1. The Facility/Building Manager shall immediately place signs above each pull station stating, “Call the Fire Department After Pulling the Alarm”. The signs may be computer generated.

4.2.4.2. Facility/Building Managers will inform personnel working in the facility of the fire system outage. Brief personnel on procedures to take in the event of a fire and to increase their awareness for detecting fires and eliminating fire hazards.

4.2.4.3. Dormitory and Billeting Facility/Building Managers will immediately appoint a walking fire guard and ensure that a walk through of the dormitory or billeting facility is accomplished every half-hour, until the fire alarm or notification system is back in service.

4.2.4.4. Facilities, other than dormitories or billeting, occupied 24 hours will not be required to perform half-hour walk through inspections. Brief workers on the situation.

4.2.4.5. A complete walk through of facilities not occupied around the clock, shall be accomplished prior to closing. Notify the Base Fire Department when the facility is closed and not occupied.

4.2.4.6. The FACC Dispatcher will ensure that Security Forces are notified of the fire system outages and to increase vigilance during their routine patrols.

4.2.5. Extended fire suppression outages in any facility must have a written Fire Emergency Operational Risk Assessment Plan submitted to the Base Fire Department accepting the stated risk and signed by the Facility/Building Manager, Unit Manager and Commander. The Base Fire Department will not provide the waiver.

4.3. **Fire Hydrants:**

4.3.1. Fire hydrants shall be flow tested every five years by CE Craftsmen. Forward results of flow tests to the Base Fire Department.

4.3.2. Paint fire Hydrants dark brown. The top hydrant nut and all caps will be color-coded for water flow, in accordance with NFPA Standards.

4.3.3. Use and operate fire hydrants only for their intended purposes by authorized personnel, using a standard hydrant wrench.

EXCEPTION: When no other source of water is available at construction sites and water is required for construction purposes, permission may be granted by the Base Civil Engineer to use a hydrant as a source of water. In such cases, immediate written notice shall be given to the Base Fire Department and the usage shall be subject to the following limitations: The connection to a fire hydrant shall be limited to not more than one 1 and ½-inch hose. Only one connection shall be permitted per hydrant.

4.3.4. Any fire hydrant found to be leaking, damaged or defective shall be immediately reported to the Base Fire Department and to the Civil Engineer Squadron for repair.

4.3.5. When a fire hydrant is placed out of service for any reason, the Base Fire Department shall be notified immediately. Mark out of service hydrants with a red metal disc, approximately nine inches in diameter, with white letters marked "OUT OF SERVICE". Attach the disc to the hydrant by means of a hole in the center of the disc that fits over the hydrant outlet and held in place by the outlet cap. Notify the Base Fire Department immediately when an out-of-service hydrant is restored to service.

5. General Fire Safety.

5.1. **Fire Emergency Access:**

5.1.1. Do not permit vehicles and/or equipment to park within 15 feet of any fire hydrant.

5.1.2. Bushes, fences, vehicles or other obstacles will not obstruct or obscure Fire Department access to sprinkler or standpipe connections.

5.1.3. No vehicle, equipment, or storage shall obstruct a prescribed fire lane. Prescribed fire lanes, within or exterior to buildings or structures, shall be identified by the Base Fire Department and clearly marked.

5.2. **Facility Evacuation Signs:**

5.2.1. Places of public assembly, health care facilities, child care and development centers dormitories, billeting facilities, and educational facilities shall have evacuation signs located throughout the facility, so that in an emergency a person will not be confused about how to egress the facility. This shall be a part of the Fire Action Plan.

5.2.2. Evacuation signs shall include the following: Drawing/layout of the facility, location of fire extinguishers, locations of fire alarm pull stations, primary and secondary means of egress, routes, and emergency phone numbers.

5.2.3. Dormitory and billeting rooms will have a fire evacuation drawing in each room.

5.2.4. The Base Fire Prevention Office will give guidance on making evacuation signs.

5.3. **Fire/Evacuation Drills:**

5.3.1. Commanders having the responsibility for the quartering of troops shall prepare an adequate plan to ensure that sleeping personnel are promptly aroused and evacuated in case of fire during the night.

5.3.2. The Facility/Building Manager shall hold fire evacuation drills a minimum of twice per year or when directed. Notify the Fire Prevention Office three days prior of a fire drill for coordination. Fire evacuation drills that involve the response of motorized fire fighting apparatus, without prior warning and approval of the Base Fire Chief, are prohibited.

5.3.2.1. Hold drills at unexpected times and under varying conditions, to simulate unusual conditions that occur with an actual fire. Drills shall include suitable procedures to ensure that all persons in the building or all persons subject to the drill actually participate.

5.3.2.2. Fire evacuation drills in buildings that have more than one means of egress, block one to simulate the exit being obstructed by fire. This practice familiarizes occupants with alter-

nate means of egress for use in an emergency. Vary the blocked exit during each successive drill. Place emphasis on orderly evacuation under proper discipline, rather than on speed.

5.3.2.3. During a fire evacuation drill, participating individuals shall continue under drill discipline even after reaching the outside area or place of safe assembly to ensure complete evacuation and accountability of all personnel.

5.3.2.4. After all personnel have been assembled in the area designated by the area or facility manager, the facility manager shall conduct a critique of the drill.

5.3.3. MFH occupants and members of their families should practice "Exit Drills in the Home" (EDITH). Make it a practice to conduct a fire drill at least twice a year, when changing batteries in smoke detectors. During Fire Prevention Week, Wednesday night at 2000 hours (0800 PM) is a nationally recognized time to do EDITH.

5.4. **Fire Doors:**

5.4.1. Personnel shall not lock open, block or otherwise obstruct the normal operation of fire doors or fire shutters (example: doors on stairwells).

5.4.2. Removal of door closures (i.e. self-closures) is prohibited.

5.4.3. Removal of a fire door is prohibited. If the door requires replacement, the new door shall meet or exceed the proper fire rating.

5.4.4. Do not alter or modify approved fire doors.

5.4.5. Inspect and test annually all horizontal or vertical sliding and rolling fire doors annually to check for proper operation and full closure. Reset the release mechanism IAW the manufacturer's instruction. The Facility/Building Manager shall maintain a written record of the test. A qualified individual shall conduct all work.

5.5. **Designated Smoking Areas:**

5.5.1. Designated smoking areas shall be permitted as per DAFB Smoking Policy directives. Approved designated smoking areas shall be clearly marked as such.

5.5.2. Designated smoking areas must be coordinated through the Fire Prevention Office. The request shall be in writing, with a drawing of the entire facility showing proposed designated smoking areas. The Fire Inspector assigned to the facility evaluates the request. The Assistant Chief of Technical Services will approve or disapprove the location of the request.

5.5.3. The Facility/Building Managers will provide an adequate number of suitable self-closing lid metal or noncombustible receptacles for discarded smoking materials in areas where smoking is permitted. Do not use such receptacles as wastebaskets. When disposing smoking materials from receptacles into dumpsters, ensure materials are wet-down with water and allowed to soak for one hour before disposal.

5.6. **Electrical Safety:**

5.6.1. The current edition of NFPA Standard 70*, National Electric Code;* NFPA Standard 70B, *Electrical Equipment Maintenance*; and NFPA Standard 70E*, Electrical Safety Requirements for Employee Workplaces* shall be the minimum standard for all electrical wiring and equipment.

5.6.2. Only authorized electricians shall install, repair, change electrical wiring and/or attachments for electrical appliances and equipment, other than vehicles.

5.6.3. Electrical Devices and Equipment Clearances:

5.6.3.1. Provide continuously clear access to all electrical control panels and disconnect devices. The depth of the working space in the direction of access to live parts shall not be less than indicated in **Table 1.** below. Distances shall be measured from the live parts if such are exposed or from the enclosure front or opening is such are enclosed.

Table 1. Working Spaces.

Minimum Clear Distance (ft)			
Nominal Voltage to Ground	**Condition 1**	**Condition 2**	**Condition 3**
0 – 150	3	3	3
151 – 600	3	3 ½	4
Notes:			
1. For SI units: 1 in. = 25.4 mm; 1 ft = 0.3048 m.			
2. Where the conditions are as follows:			
Condition 1 — Exposed live parts on one side and no live or grounded parts on the other side of the working space or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated busbars operating at not over 300 volts shall not be considered live parts.			
Condition 2 — Exposed live parts on one side and grounded parts on the other side. Concrete Brick or tile walls will be considered as grounded surfaces.			
Condition 3 — Exposed live parts on both sides of the workspace (not guarded as provided in Condition 1) with the operator between.			

EXCEPTION 1: Working space shall not be required in back or sides of assemblies, such as dead-front switchboards or motor control centers, where there are no renewable or adjustable parts, such as fuses or switches, on the back or sides and where all connections are accessible from locations other than the back or sides. Where rear access is required to work on de-energized parts on the back of enclosed equipment, provide a minimum working space of 30 in. (762 mm) horizontally.

EXCEPTION 2: By special permission, smaller spaces shall be permitted where all uninsulated parts are at a voltage no greater than 30 volts RMS, 42 volts peak, or 60 volts dc.

EXCEPTION 3: In existing buildings where electrical equipment is being replaced, Condition 2 working clearance shall be permitted between dead-front switchboards, panel boards, or motor control centers located across the aisle from each other where conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on both sides of the aisle from being open at the same time and qualified persons who are authorized will service the installation.

5.6.3.2. Width of Working Space. The width of the working space in front of the electrical equipment shall be the width of the equipment or 30 in. (762 mm), whichever is greater. In all

cases, the work space shall permit at least a 90 degree opening of equipment doors or hinged panels.

5.6.3.3. Label electric switches, circuit breakers, and fuses in power panels correctly to indicate the circuits or devices they control.

5.6.3.4. Do not install devices that interfere with the normal operation of a circuit breaker or fuse.

5.6.3.5. When a tripped breaker or blown fuse has interrupted a circuit, the source of the disturbance shall be located and eliminated before restoring power to the interrupted circuit.

5.6.3.6. Do not use circuit breakers as switches, unless the breaker is specifically designed for switching.

5.6.4. Report defective electrical equipment to the CEO Work Order Section. If electrical service is insufficient, submit an AF Form 332 to the CE Service Desk for corrective action. Promptly report defective or suspect wiring to the Facility/Building Manager, alternate or to CE service call for repairs.

5.6.5. Electrical Device Safety:

5.6.5.1. Only electrical appliances and devices that bear a UL label or those listed by other approved testing agencies may be used on Dover AFB.

5.6.5.2. Broken appliance plugs and frayed or spliced wiring are considered a fire hazard and shall not be used.

5.6.5.3. Turn off soldering irons, coffee makers, office machines and other non-fixed electrical devices when not in use. There shall be adequate clearance between heat-producing electrical devices and combustible material. The use of automatic timers to control power supplies is prohibited.

5.6.5.4. Do not place combustible shades, decorations or other materials on or over light bulbs.

5.6.6. Extension Cords and Power Strips:

5.6.6.1. Extension cords and outlets: The use of extension cords shall be of sufficient gauge for the applicable use (use the same size wire as the appliance being energized).

5.6.6.2. Do not hang anything from or attach anything to electrical cords, wiring or conduit.

5.6.6.3. UL approved power strips with safety fuses are limited to computer / computer accessories.

5.6.6.4. Only two electrical outlets may be used on standard UL three plug extension cords.

5.6.6.5. Electrical cords shall be without splices and shall not be hung over nails, rafters, or in a manner, which would constitute a fire hazard.

5.6.6.6. Do not place electrical cords under rugs, carpets or other combustible materials.

5.6.6.7. Extension cords shall not be used in lieu of permanent wiring and shall not run through walls, ceilings, floors, doorways, windows or other similar openings.

5.7. **Cooking Appliances:**

5.7.1. Cooking is permitted only in properly arranged and equipped authorized locations.

5.7.2. Private Rooms of Bachelor Enlisted/Officer Quarters, and Similar Buildings: No cooking or use of hot plates, electric frying pans and similar small electrical appliances is permitted unless such rooms or areas are provided with kitchens or cooking facilities. In VAQ/VOQ facilities without kitchens, microwave ovens are authorized provided the electrical power supply is adequate.

5.7.3. Hoods and Ducts: Commercial type cooking equipment, where grease-laden vapors are produced, as in clubs, snack bars, cafeterias and other large food preparation facilities, shall be protected and serviced in accordance with NFPA Standard 96*, Ventilation Control and Fire Protection of Commercial Cooking Operations*.

5.7.3.1. Where smoke or grease-laden vapors are produced, exhaust systems over cooking surfaces shall have removable noncombustible filters or listed/approved grease extractors. Do not cook unless all filters are in place.

5.7.3.2. Clean hoods and ductwork over cooking surfaces periodically to prevent excess grease accumulation. Clean all hoods and ductwork a minimum of every six months. Document cleanings in the Facility Folder. Commercial cleaning for duct systems is provided by a service contract administered by CE.

5.7.4. Deep Fat Fryers:

5.7.4.1. Must be equipped with a primary thermostat of 400 degrees Fahrenheit (F) and a secondary thermostat that ensures the temperature of the liquid does not exceed 475 degrees F. The 475 degrees F maximum temperature includes the additional rise that occurs for several minutes after the secondary thermostat de-energizes the unit. Test thermostats annually by a contractor or CE Electrical Shop.

5.7.4.2. Do not install deep fat fryers closer than 16 inches to cooking equipment with an open flame.

5.7.4.3. Provide a metal or metal-clad cover for each deep fat fryer and have them readily available for immediate use in case of fire.

5.7.4.4. The Facility/Building Manager will provide the Fire Prevention Office with a copy of the documentation to verify the testing has been conducted and the unit operates properly. If the unit fails to function as outlined above, remove it immediately from service. Attach metal tags with the date last tested to each unit.

5.7.5. Portable fire extinguishers listed for Class K fires shall be provided at all locations where cooking is conducted, IAW NFPA 10.

5.8. **Heating Appliances:**

5.8.1. All building heating equipment shall be labeled and/or listed by the American Gas Association, Underwriters Laboratories, Inc. (UL), or Factory Mutual Laboratories (FM), and shall be installed, maintained, and operated under the approval listings, manufacturer's operating instructions and the NFPA.

5.8.2. Portable electric heaters may be used for temporary heating, provided they carry UL or FM Labels, and are of a type in which the electrical circuitry is automatically shut off if unit is tipped

over. Power supply cords and plugs shall be in good condition and supply circuit shall be adequate for safe use.

5.8.3. Duct-type portable gasoline-fired heaters (e.g. Herman Nelson or similar models) are not authorized for heating any building unless prior approval is obtained from the Fire Chief and Base Safety Office, and only if the use is temporary and held to a minimum.

5.8.4. Use of an open flame-heating device is prohibited.

EXCEPTION: The installation of suspended oil furnaces and gas-fired unit heaters, when the use, location and installation of such equipment is permitted by specific provisions of pertinent sections of the NFPA and the unit is specifically listed and/or approved for such installation.

5.8.5. The use of unvented hydrocarbon-fueled heating appliances inside buildings is prohibited. Hydrocarbon fuels include natural gas, gasoline, fuel oil, alcohol and petroleum based oils and kerosene.

5.8.6. A clearance of 36 inches must be maintained between all heating equipment (i.e. range, furnace, fireplace or space heater) and combustible materials, including hanging clothing, cloth, or similar materials, unless otherwise specified by the manufacture.

5.8.7. Vent clothes dryers to the exterior of a facility. Keep dryer lint traps and vent piping free of lint accumulation.

5.8.8. Do not place combustible materials on radiators, heaters, or steam pipes.

5.9. **Open Fires/Barbecues:**

5.9.1. No open fires, such as used for removing paint from any structure, burnishing of wood by use of a heat or flame-producing device, campfires, candles, or incense shall be permitted at any time without the approval of the Base Fire Chief.

EXCEPTION 1: When necessary for ceremonial or religious purposes.

EXCEPTION 2: Candles may be used on tables if securely supported on substantial noncombustible bases, so located as to avoid danger of ignition of combustible materials. Candle flames shall be protected, i.e., glass globes.

EXCEPTION 3: Portable cooking equipment that is not flue connected shall be approved equipment fueled by small heat sources that can be readily extinguished by water, such as candles or alcohol burning equipment (including “solid alcohol”), provided adequate precautions to prevent ignition of any combustible materials have been taken.

EXCEPTION 4: Candles and incense burning are permissible in Military Family Housing provided they are not left unattended.

5.9.2. Barbecue Grills:

5.9.2.1. Do not use grills (gas or charcoal) inside buildings (including storage sheds), on porches or on balconies. Grills must be a minimum distance of 15 feet from buildings or overhangs when in use.

5.9.2.2. Propane gas grills with attached tanks will not be stored inside any enclosed facility including storage sheds. Propane tanks will not be stored inside facilities to include indoor flammable cabinets.

5.9.2.3. Disposing of spent charcoal briquettes: quench hot coals with water and cover with a noncombustible cover to prevent sparks or hot coals from being scattered by the wind. Leave coals in grill overnight, then soak again and put in metal or noncombustible garbage can.

5.9.2.4. Keep charcoal briquettes in a dry place until used.

5.10. **Decorations:**

5.10.1. General Decorating:

5.10.1.1. Ensure decorations do not interfere with operation of fire protection systems, obstruct pull stations or extinguishers and do not block means of exits.

5.10.1.2. Decorations made of dried corn stalks, straw, and like materials shall not be permitted.

5.10.1.3. Curtains and other combustible materials shall be at least six inches from window decorative lights.

5.10.2. Furnishings and decorations in building occupancies, such as health care, day care, and places of assembly, shall be in compliance with the requirements of NFPA 101.

5.10.3. Burning scented or decorative candles and similar open-flame devices in barracks, VOQ, VAQ, TLF and similar sleeping occupancies is prohibited. Decorations and displays must not include lighted candles, other open flame or high heat production devices.

5.10.4. Decorations shall have the UL approval and be marked “Flameproof”. Before the installation of any special decorative materials, obtain approval from the Base Fire Chief. In all cases, keep decorations to a minimum to prevent the possibility of fire.

5.10.5. Do not permit live Christmas trees are in any work place or public assembly facility. Artificial Christmas trees shall be rated by UL or FM and be labeled as such. The use of recently cut live Christmas trees in facilities on Dover AFB, with the exception of MFH, is prohibited IAW NFPA Standard 1, *Fire Prevention Code,* Chapter 3, Section 13.1.

5.10.5.1. Use only UL approved electric lights that are in good condition and not worn or frayed.

5.10.5.2. Turn off decorative lights when leaving the facility or when retiring for the evening.

5.10.5.3. Keep the tree away from radiators, stoves and other sources of heat.

5.10.5.4. Trees shall not be located near entrance or exit doors or near any stairwell.

5.11. **Static Electricity:**

5.11.1. Before entering any area where explosive vapors may exist (gases, dust, etc.) all personnel will dissipate the accumulated static electricity present in their bodies and clothing by touching a grounding rod or other safe grounding items.

5.11.2. Aircraft fuel cell maintenance, aircraft operations and explosive storage will follow appropriate Technical Orders.

5.12. **Vehicle Parking:**

5.12.1. Control general parking of vehicles to ensure free access of emergency response equipment to all sides of buildings and structures.

5.12.1.1. Do not park vehicles within 15 feet of fire hydrants, post indicator valves, sprinkler connections, Fire Department connections.

5.12.1.2. Do not park or leave vehicle unattended in front of or near hangar or dock doors that may block aircraft emergency removal.

5.12.1.3. Do not park vehicles closer than 15 feet of any building or structure.

EXCEPTIONS:

(1) Loading or unloading of passengers or goods.

(2) Authorized marked parking spots approved by the Fire Prevention Office.

5.12.2. Parking of Flammable Liquid Transport Vehicles:

5.12.2.1. Park flammable and combustible tank vehicles only in authorized locations.

5.12.2.2. Tank vehicles shall be parked in groups of not more than three with a 50 foot separation between groups. Select parking locations so that the vehicles are accessible from all sides for firefighting operations and so that any of the tank vehicles can be moved (either under their own power or towed) from their location without moving another vehicle.

5.12.2.3. Do not park Flammable Liquid Transport Vehicles where the ground slopes toward any building, stored material or storm drain, unless there is a protective ditch or dike between the vehicle and the building, stored material or drains.

5.12.2.4. Ground tank vehicles containing Class I Liquids when parked.

5.12.3. Storage and Repair of Vehicles:

5.12.3.1. Vehicles shall not be permitted in any building for repairs or storage, except for approved maintenance buildings or with written approval of the Base Fire Marshal and Base Fire Chief.

5.12.3.2. Do not store or repair privately owned vehicles, including motorcycles, inside government buildings or structures other than those specifically designated for that purpose, such as the Auto Hobby Shop or BX Service Station.

6. General Housekeeping.

6.1. **General Storage and Handling:**

6.1.1. Housekeeping activities are the responsibility of the using agency or organization, whether or not custodial services are authorized. Keep all areas free of large accumulations of combustible materials. Maintain and enforce good housekeeping at all times.

6.1.2. Do not obstruct aisles, passageways and emergency exits.

6.1.3. Storage under stairways is prohibited.

6.1.4. Keep attics and concealed spaces clean. Do not permit storage of any type in these areas.

EXCEPTION: Attics may be used for storage in MFH.

6.1.5. Maintain a minimum of 18 inches from combustibles and light fixtures, and 36 inches from heating appliances.

6.1.6. Adequately ventilate clothing lockers and keep in a clean and orderly condition. Do not store materials on top of or underneath lockers.

6.1.7. All shelving shall be metal.

EXCEPTION: Storage of certain hazardous materials requires wood construction; see NFPA Standard 30, Flammable and Combustible Liquids Code.

6.1.8. Maintain custodial supply storage rooms in an orderly and fire safe condition. Do not store flammable or hazardous materials or trash in these areas.

6.1.9. Keep combustible packing materials in original containers until used. Once the original container is opened, place unused material in a metal or metal-lined bin with a self-closing metal lid.

6.1.10. Steel wool shall be stored within metal storage lockers.

6.2. **Storage in Mechanical and Boiler Rooms:**

6.2.1. Storage is prohibited in mechanical, electrical, and boiler rooms.

EXCEPTION: One change of heater filters is permitted to be stored in mechanical rooms.

6.2.2. Keep mechanical, electrical and boiler rooms secured. Do not use padlocks. Secure these rooms with the proper locking means set forth in the NFPA 101.

6.3. **Garbage/Rubbish:**

6.3.1. Police working and storage areas, new construction and repair areas regularly, to reduce fire hazards.

6.3.2. Keep work areas reasonably free of combustible debris accumulation. Dispose of rubbish and scrap materials in properly identified noncombustible cans, bins or receptacles. At the close of the normal workday, take to locations approved for rubbish disposal or temporary storage.

6.3.3. Use only containers that are approved by a nationally recognized testing laboratory for disposal of combustible trash or rubbish inside buildings.

6.3.4. Place dumpsters and other central trash disposal units at least 50 feet (security regulation) from any building. Keep dumpster lids closed except when refuse is being loaded.

6.3.5. All rags shall be disposed of IAW Environmental guidelines. Store soiled rags in metal containers with self-closing metal covers until removed from building. Containers must be marked “DIRTY RAGS”.

6.3.6. Store steel wool separately in covered metal containers.

6.3.7. Personnel Service Rooms: Use metal or testing-laboratory-listed plastic trash receptacles with self-closing lids in all restrooms or latrines and in other areas where paper towels or disposable paper or plastic cups are used.

6.3.8. Clear leaves and vegetation from under and around buildings. Do not allow cuttings to accumulate within six feet of buildings. Remove dead vegetation.

6.3.9. Empty dust collection bags and other waste receptacles at the end of the workday. Keep areas used for packing and crating free of accumulation of combustible materials.

6.4. **Vacant Buildings:**

6.4.1. Secure vacant buildings against unauthorized trespass. Lock doors and bar windows with wood or fixed shutters to prevent access, where necessary.

6.4.2. Electrical power to vacant buildings shall be shut off by either disconnecting the incoming power lines outside the building, opening the main or securing the distribution power master switch (when provided) by means of a padlock. Maintain power for fire alarm systems and support of sprinkler systems.

6.4.3. Close and seal fuel inlet valves on furnaces, boilers and other means of heating in vacant buildings where heat is not required.

6.4.4. Notify the Fire Prevention Section whenever a building becomes vacant and when it is again occupied.

6.5. **Outside Storage Sheds:**

6.5.1. Separation of storage sheds, excluding hazardous materials storage sheds, shall meet NFPA Standard 220, *Types of Building Construction* for distances from other main structures. To determine the minimum distance for non-combustible type sheds from most facilities on the base, use the shed height times two. Contact the Fire Prevention Office for other types of storage sheds separation distances.

7. Means of Egress.

7.1. **Exits:**

7.1.1. Arrange exits in for full compliance with NFPA 101.

7.1.2. Doors:

7.1.2.1. Arrange doors so they may be readily opened from the egress side when the building is occupied. Locks, if provided, shall not require the use of a key, tool, special knowledge or effort for operation from the inside the building.

7.1.2.2. Panic hardware shall be required on the exit doors of all new facilities, with the exception of MFH. Renovations to facilities shall include panic hardware.

7.1.2.3. Do not lock or chain exit doors while the building is occupied.

7.1.3. Stairs and stairways shall comply with NFPA 101. Protect stairway enclosures by self-closing fire rated doors. Do not wedge, block or use any other device to keep doors in the open position or prevents the doors from closing automatically, unless specifically designed with smoke detector release hardware.

7.1.4. Do not permit knockout or kick-out panels or emergency escape panels of any kind in lieu of standard exit facilities, as required by NFPA 101.

7.1.5. All means of egress such as stairway enclosures, foyers, hallways and entranceways shall not be utilized for storage, i.e. bikes, lockers, personal items, etc.

7.2. **Exit Signs:**

7.2.1. Exit illuminations and markings shall comply with NFPA 101.

7.2.2. Mark access to exits by approved, readily visible signs in all cases where the exit or way to reach the exit is not readily apparent to the occupants. Sign placement shall be such that no point in an exit access corridor is in excess of 100 ft (30 m) from the nearest externally illuminated sign and is not in excess of the marked rating for internally illuminated signs.

EXCEPTION: Signs in exit access corridors in existing buildings shall not be required to meet the placement distance requirements.

7.2.3. Repair inoperative exit lights on a priority work order.

7.2.4. Exits, other than main exterior exit doors that obviously and clearly are identifiable as exits, shall be marked by an approved sign readily visible from any direction of exit access.

7.2.5. Special Signs: Any door, passage or stairway that is neither an exit nor a way of exit access, and is so located or arranged that it is likely to be mistaken for an exit, shall be identified by a sign reading "NO EXIT". Such sign shall have the word "NO" in letters two inches high with a stroke width of three eighths inches and the word EXIT shall be in letters one inch high, and placed below the word NO.

7.3. **Blockage of Exits:**

7.3.1. Every required exit, exit access or exit discharge shall be continuously maintained free of all obstructions or impediments to allow full instant use in the case of fire or other emergency.

7.3.2. When necessary to block, obstruct or rearrange any existing exit in a manner which destroys or reduces its function, an additional exit or exits shall be provided, located and arranged in strict conformance with NFPA 101.

7.4. **Means of Locking and Securing Exits:**

7.4.1. Do not permit padlocks and/or hasps on interior/exterior doors, except for storage or industrial occupancies, unless the doors are to be locked in the open position. Occupants of these types of buildings/rooms should be able to unlock doors from the inside without using a key.

7.4.2. Restrictive hardware, such as padlocks and hasps, throw-bolts, and crossbars shall not be installed on any exit door except as permitted by NFPA 101. Where either physical or classified security is a major concern, judicious use of a two-point (top and bottom) latching panic hardware, without exterior door operating hardware, is an effective measure. Such doors, when not normally under direct observation by operating personnel, may also be provided with simple effective door alarm devices as an additional control measure.

7.5. **Travel Distance Limitations:**

7.5.1. Travel distance is limited in various occupancies. This means the distance that one needs to travel from the most remote place in the facility to an exit.

7.5.2. Travel distances will be in accordance with NFPA 101, Chapter 7.

7.6. **Emergency Lighting:**

7.6.1. Provide emergency lighting for means of egress in accordance with Section 7.9. for the following:

(1) Buildings or structures where required in Chapters 11 through 42

(2) Underground and windowless structures as addressed in Section 11.7.

(3) High rise buildings as required by other sections of this Code

(4) Doors equipped with delayed egress locks

(5) The stair shaft and vestibule of smoke proof enclosures which shall be permitted to include a standby generator that is installed for the smoke proof enclosure mechanical ventilation equipment and used for the stair shaft and vestibule emergency lighting power supply

NOTE: For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, ramps, aisles, walkways, and escalators leading to a public way.

7.6.2. Periodic testing of emergency lighting equipment: A functional test shall be conducted on every emergency lighting system at 30-day intervals for a minimum of 30 seconds and shall be documented in the Facility Folder.

7.6.3. An annual test shall be conducted for a one and one half-hour duration. Equipment shall be fully operational for the duration of the test. The Facility/Building Manager shall keep written records of visual inspections and tests.

8. Hazardous Materials.

8.1. **Explosives, Blasting Agents and Pyrotechnics:**

8.1.1. For the purpose of this DAFB Instruction, an explosive is defined as: Any substance or article including a device which has been designed to function by explosion (an extremely rapid release of gas and heat) or by a chemical reaction which within itself, may function in a similar manner, even if it is not designed to function by explosion (a Self-Accelerating Decomposition Temperature (SADT) of an organic peroxide).

8.1.2. Explosives, blasting agents and pyrotechnics will be stored, handled and used IAW NFPA Standard 495, *Explosive Materials Code* and AFM 91-201*, Explosives Safety Standards*.

8.1.3. Vegetation Control: Keep all grounds surrounding storage areas clear of excess vegetation by establishing appropriate mowing and weed control schedules with the Base Grounds Contractor. The Base Fire Chief will approve and provide oversight for controlled burning of vegetation.

8.1.4. Post proper fire symbols on all buildings, rooms or areas storing explosives as required by the explosive license for that area. Personnel in charge of explosives must promptly notify the Base Fire Department each time there is a change in the explosives fire or hazard symbols.

8.1.5. Explosives, blasting agents or pyrotechnics will not be transported by any person or agency on the installation without notifying the Base Fire Department Communications Center. All movements or relocations of explosive (except **1.4.**) are included in this requirement.

8.1.6. The sale, possession, use, storage or transportation of fireworks is prohibited on Dover AFB unless approved, in writing, by 436th Wing Safety (SEG) and the Base Fire Chief.

8.1.7. Fire Drills: Conduct fire drills within explosive storage areas at intervals not to exceed six months. Coordinate drills through the Base Fire Department Training Office, Weapons Safety Office and the unit commander of the affected area. Ensure all involved are aware that an exercise, not an actual fire, is in progress.

8.1.8. Do not use flammable liquids for cleaning purposes, except as authorized. Confine authorized use to a specific, designated work area. In-use stocks may not exceed a one-day supply. Store materials in approved safety containers or dispensers only.

8.1.9. Store only small stocks of flammable materials, such as paints and solvents required for support of explosive maintenance, in an approved flammable storage locker. When not in use, store in exterior flammable storage cabinets or lockers.

8.1.10. Use the following guidance when operating support equipment (not including vehicles) powered by internal combustion engines: Do not park vehicles, other than those being loaded or unloaded, closer than 25 feet to any explosive facility or storage area.

8.1.10.1. Locate operating equipment 50 feet or more from explosives.

8.1.10.2. Place aircraft ground support equipment as far away as the length of the cord will allow.

8.1.10.3. Equipment may be closer, provided adequate ventilation and a fire resistant dividing wall is provided.

8.1.10.4. Equipment designed into, and installed, as part of an operating or storage facility shall be exempt.

8.1.10.5. Do not refuel equipment within 100 feet of explosives.

8.1.11. Stacking Combustible Material: See AFMAN 91-201, para 2.21.8., for specific guidance.

8.1.12. Fire Extinguishers:

8.1.12.1. Unless otherwise directed by the Base Fire Department, provide a minimum of two serviceable extinguishers, suitable for the hazards involved during loading or unloading operations or maintenance.

8.1.12.2. The type of extinguisher(s) required will be established on the explosive license for a specified area.

8.1.12.3. Ensure one fire extinguisher is available for each item of powered materials handling equipment used to handle or transport explosives.

8.1.12.4. Each explosives-laden vehicle used for transport shall have a minimum of two portable 2A: 10BC (5 lbs. Dry Chemical) rated extinguishers.

8.1.12.5. Provide flight line fire extinguishers for each aircraft according to munitions manuals and T.O. 00-25-172.

8.1.12.6. Inspect fire extinguishers annually. For guidance on maintenance and inspection, see Chapter 4.

8.1.13. Emergency Withdrawal Distances for Nonessential Personnel: Refer to AFMAN 91-201, para 2.24 and Table 2.

8.1.14. Fire Fighting Symbols:

8.1.14.1. Military Firefighting Guidance Symbols: Ref AFMAN 91-201, para 2.25. and figure 2.1. Requirements for posting fire-fighting symbols are outlined in AFMAN 91-201, para 2.25.7.

8.1.14.2. Post DOT Fire Symbols and Hazard or DOD placards on parked transportation vehicles. Use placards for the transportation of explosives as directed in AFMAN 91-201, para 2.71.2., and DOT placards as outlined in CFR Title 49, Part 172.

8.1.14.3. Chemical hazard symbols are found in AFMAN 91-201, figure 2.2. and NFPA Standard 704*, Identification of the Hazards of Materials*.

8.2. **Flammable and Combustible Liquids:**

8.2.1. Flammable and Combustible Liquids dispensing, storage and use will be IAW NFPA 30, AFOSH 91-105,*Critical Components*; 29 CFR 1910.106 and this DAFBI. For the purposes of this DAFB Instruction: Flammable Liquids are defined as any liquid with a flash point below 100° F (37.8° Centigrade).

8.2.1.1. Examples of flammable liquids include gasoline, alcohol, naphtha, lacquer paints and thinners. Combustible liquids are defined as any liquid having a flash point greater than 100° F. Combustible liquids include kerosene, mineral spirits, #2 diesel fuel and JP-8.

8.2.2. Flammable and Combustible liquids are divided into classes, refer to **Table 2.** below.

Table 2. Classes of Flammable and Combustible Liquids.

Class	Flash Point	Boiling Point
IA	< 73° F	< 100° F
I B	< 73° F	=/> 100° F
I C	=/> 73° F	< 100° F N/A
II	=/> 100° F	< 140° F N/A
IIIA	=/> 140° F	< 200° F N/A
IIIB*	=/> 200° F	N/A
* This class is not included in AFOSH STD 91-43		

8.2.3. General Requirements:

8.2.3.1. Strictly enforce “No Smoking” areas in and around all flammable and combustible liquid storage. Store all flammable or combustible liquid containers (including safety cans or pots) in approved flammable storage cabinets, lockers or areas, when not in use.

8.2.3.2. Flammable/Combustible liquids will not be stored in any public assembly facility, club, barracks, VOQ/VAQ, TLQ, office areas, desks, or unattended workbenches.

8.2.3.3. Gasoline or other flammable/combustible liquid containers, utilized or sold on this installation will be UL or like agency tested/listed, having a tight closing screw or spring type lid and fitted with a suitable pouring spout. Do not use glass containers for storing, dispensing or carrying flammable liquids unless specified by the product manufacturer.

8.2.3.4. Do not dispose flammable/Combustible liquids in sewers, canals, drainage systems or any other restricted or unauthorized area. Contact CE Environmental Flight (CEV) for proper disposal guidance.

8.2.3.5. Do not use flammable liquids for cleaning equipment parts, refinishing floors, desks, or other furniture. Use only nonflammable cleaners, solvents and/or water based solvent detergents. Request exceptions for specific operations through the Base Fire Chief.

8.2.3.6. Flammable/Combustible liquid containers found to be leaking will be moved to a safe location and the contents transferred to a serviceable container. Contact CEV for waste container disposal guidance.

8.2.4. Flammable Liquid Storage Cabinets:

8.2.4.1. No more than 120 gals of flammable/combustible liquids Class I, II, and III shall be stored in a single cabinet. Of the 120 total gals, no more than 60 gals of flammable/combustible liquids Class I and II may be stored in a single cabinet.

8.2.4.2. No more than three such cabinets may be located in a single fire area, except in certain industrial areas. For definition of a fire area, refer to AFOSH 91-105.

EXCEPTION: If more than three (3) cabinets are required (360 gals), separate additional cabinets by 100'. The number of storage cabinets in one fire area may be increased if smaller cabinets are used or the containers in the cabinet are smaller in size. However, 360 gals will still the maximum quantity in one fire area.

8.2.4.3. Flammable storage cabinets must not be located next to exit doors or physically obstruct a means of egress from the building or area. Additionally, do not place cabinets under stairways or near any other egress routes.

8.2.4.4. Cabinets must be constructed IAW AFOSH 91-105 and NFPA 30, section 4-3.3. Cabinets must have an operational 3-point lock system on doors. Cabinets must have a two-inch catch basin in the bottom for spill containment.

8.2.4.5. Cabinet must have a visible, contrasting color, exterior label that states, "FLAMMABLE - KEEP FIRE AWAY". Cabinets must have one and one half-inch air space between exterior/interior walls and other cabinets.

8.2.4.6. If the cabinet is located indoors, the ventilation caps/bungs must be in place. If the cabinet requires venting, vent through piping to the outdoors.

8.2.4.7. Grounding of flammable storage cabinets is not required.

8.2.5. Flammable Storage Lockers:

8.2.5.1. Flammable/Combustible Storage Lockers used as inside rooms shall be considered inside storage rooms, and shall meet the requirements for inside rooms, Ref AFOSH 91-105 para 3.5. through 3.9.

8.2.5.2. Outside storage lockers will not exceed 1500 square feet gross floor area. Do not allow vertical stacking of lockers.

8.2.5.3. Lockers shall include a spill containment system to prevent the flow of liquids from the structure under emergency conditions. The spill containment system shall provide sufficient capacity, to contain up to 10 percent of the volume of the containers allowed or the vol-

ume of the largest container, whichever is greater.

8.2.5.4. Electrical equipment and wiring inside storage lockers for Class I liquids shall be suitable for Class I, Division 2 locations. Electrical equipment and wiring inside storage lockers for Class II and III liquids shall be suitable for general purpose use.

8.2.6. Non-Tank Designated Flammable/Combustible Storage Sites:

8.2.6.1. Do not permit open flames and smoking within 50 feet of flammable or combustible liquid storage areas and post appropriate signs.

8.2.6.2. Hazardous Materials markings will conform to NFPA 704 symbols to reflect contents.

8.2.6.3. Location of site and locker spacing shall be in accordance with **Table 3.** below.

Table 3. Designated Sites.

Area of designate site	Distance between individual lockers	Distance from locker to property line that is or can be built upon	Distance from locker to property line of public ways or to important buildings on same properly
<100sq ft	5 ft	10 ft	5 ft
>100 < 500 sq ft	5 ft	20 ft	10 ft
>500 < 1500 sq ft	5 ft	30 ft	20 ft

8.2.6.4. The approved designated storage site shall be protected from tampering or trespassing when the area is accessible to the general public.

8.2.6.5. No other flammable or combustible material storage shall be within the designated site.

8.2.7. Inside Storage Rooms, Ref AFOSH 91-105 par 3.5. through 3.9.

8.2.7.1. Storage in Flammable/Combustible Liquid Cabinets, Lockers or Areas:

8.2.7.2. Flammable/Combustible liquids must be in approved, properly labeled, containers with lids. Do not allow open containers in storage cabinets, lockers or areas.

8.2.7.3. Do not place oxidizers or other incompatible substances that may adversely react with flammable/combustible liquids in the same cabinet. If storage of other materials is required, see the appropriate section of this DAFBI.

8.2.7.4. Rags, paper and other combustible materials will not be stored inside flammable storage cabinets.

8.2.7.5. Unopened shipping boxes/containers and protective packaging from the manufacturers that contain flammable liquids are permitted. However, once the box/container is opened, it shall be discarded. Boxes/containers that are opened for labeling purposes may be stored only if the container is full and complete. Protective over-packing that secure containers from breaking, tipping over or spilling shall be permitted until empty of all containers.

8.2.7.6. Water reactive materials will not be stored in the same room with flammable or combustible liquids.

EXCEPTION: Small quantities may be stored in laboratories (Refer to AFOSH 91-105, para 3.7.9.).

8.2.7.7. Oily rags and waste will be stored in closed, metal, properly labeled, containers with tight fitting lids and emptied at least once daily or more often if needed (Spring loaded lids on 55-gallon drums, used for rag containers, as satellite accumulation points, are permitted).

8.2.7.8. Gasoline or other fuels will be drained from fuel tanks or immersion heaters, lawn mowers, kitchen ranges, gas lanterns and other like equipment, before storage in supply rooms. Tightly close filler caps on fuel tanks. Contact CEV for disposal guidance.

8.2.8. Handling of Flammable and Combustible Liquids:

8.2.8.1. Flammable and Combustible Liquids may be drawn from or transferred into vessels, containers or portable tanks within a building. A closed piping system from safety cans, by means of a device through the top or from containers or portable tanks by gravity through an approved self-closing valve (AFOSH 91-105 para 3.11.). Contact the CE Environmental Flight (CEV) for disposal guidance.

8.2.8.2. Flammable/combustible liquids will be drawn from or dispensed into tanks or containers within a building or non-dispensing designated area only with the drum in an upright position, using approved and listed, manually, pneumatically, or electrically operated pumps, IAW NAPA 30.

8.2.8.3. Bond and ground tanks, hoses, and containers while pouring and dispensing flammable liquids to prevent static electricity discharge.

8.2.8.4. Do not transfer of flammable liquids or purging of tanks or containers by compressed air or gases (other than specified in applicable T.O.s and/or written in procedural guides).

8.2.8.5. Containers and portable tanks used for Class I liquids will be electrically bonded and grounded during transfer of liquids. Tanks and containers must be marked properly.

8.2.9. Fire Protection in Flammable Storage Areas:

8.2.9.1. At least one serviceable, portable fire extinguisher rated at no less than 4A: 20 B: C (10 lbs. Dry Chemicals), will be located between 10 and 25 feet of any Class I or Class II liquid storage area outside of a storage room located inside a building or an outside storage locker.

8.2.9.2. Install fire suppression or extinguishing systems, as approved, per requirements in UFC 3-600-01 and AFOSH 91-56, in buildings or storage rooms.

8.2.9.3. Dip tanks, vats, wash tanks, bench washing vats or parts washers and other similar containers will be of metal construction, equipped with tight fitting, noncombustible covers equipped with fusible links, which will close the covers automatically in the event of fire. Lids will remain closed when not in use.

8.2.10. Storage and Use of Flammable and Combustible Liquids in Specific Applications:

8.2.10.1. For Laboratories: Ref AFOSH 91-105, Chapter 3.13.

8.2.10.2. For Base Exchanges, Commissaries and Associated Retail Stores: Ref AFOSH 91-105, Chapter 3.14.

8.2.10.3. For Base Supply Warehouses, Base Exchange Storage Rooms, and Commissary Storage: Ref AFOSH 91-105, Chapter 3.9.

8.2.10.4. For Flammable/Combustible Liquid Warehouses or Storage Buildings: Ref AFOSH 91-105.

8.2.10.5. For Small Gasoline Powered Equipment: Ref AFOSH 91-105.

8.2.11. Vehicle Fueling Stations: Ref 10.2. of this Instruction.

8.2.12. Bulk POL Storage Operations: Ref 10.3. of this Instruction.

8.3. **Flammable Solids:**

8.3.1. For the purposes of this DAFB Instruction, Flammable Solids are defined as: A solid, other than a blasting agent or explosive as defined in 29 CFR 1910.109 (a), that is liable to cause a fire through friction, absorption of moisture, spontaneous chemical change or retained heat from manufacturing or processing, which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.

8.3.2. Flammable solids such as Aluminum, Magnesium, Lithium, Beryllium, Titanium, Zirconium, matches and sodium, will be stored, machined, fabricated, heat treated, collected for scrap and disposed of IAW NFPA Standard 484, *Combustible Metals, Metal Powders, and Metal Dust* for storage, handling, and processing combustible metals and this DAFB Instruction. This section will also apply to the above applications for any flammable solid located on this installation.

8.3.3. Storage of Pigs, Ingots and Billets of Flammable Solids:

8.3.3.1. Readily combustible material shall not be stored within a distance of 25 feet (7.6 m) from any pile of flammable metal materials.

8.3.3.2. No cutting, welding, or burning in hazardous areas shall be permitted without approval of the Base Fire Department.

8.3.4. Indoor storage of the above listed materials shall conform to the following general requirements:

8.3.4.1. Storage shall be in buildings of noncombustible construction.

8.3.4.2. Floors shall be of noncombustible construction and well drained to prevent accumulations of water puddles.

8.3.4.3. Supports used under piles of flammable solid materials shall be noncombustible. There shall be no idle pallet storage in the area used for storage of flammable solids.

8.3.5. Automatic sprinkler protection will not be installed in flammable solid storage buildings where combustible cartons, crates, or other packing materials are present. ***NOTE:*** The storage of some flammable solids specifically prohibits any water or sources of water in the area. For specific substance protection requirements call the Base Fire Department Fire Prevention section.

8.3.6. Storage of Scrap Flammable Solids:

8.3.6.1. This section shall apply to the storage of scrap flammable solids in the form of chips, turnings, swarf, or fine particles.

8.3.6.2. Buildings shall be of Type II Fire Resistive construction.

8.3.6.3. Dry flammable solid scraps shall be kept well separated from other combustible materials. Keep scraps in covered steel or other noncombustible containers and keep in such a manner or location that they will not become wet. Outside storage of flammable solid fines shall be permitted if such storage is separated from buildings or personnel and great care is exercised to avoid the fines from becoming wet. Label all containers properly.

8.3.6.4. Keep wet flammable solid scrap (chips, fines, swarf or sludge) under water in covered and vented steel containers in an outside location. Keep sources of ignition away from the drum vent and top. Containers shall not be stacked.

8.3.6.5. Keep storage in quantities greater than 50 cubic feet (1.4 m^3) (six 55-gallon drums) separate from other occupancies by fire-resistive construction without window openings or by open space of at least 50 feet (15 m). Such buildings shall have explosion vents.

8.3.6.6. Automatic sprinklers in flammable solid storage buildings shall be prohibited.

8.3.6.7. Suitable fire extinguishing materials shall be readily available in these locations. The type and quantity of Class D fire extinguishers or Class D fire extinguishing material shall be determined by the Base Fire Department, for the type of hazard present.

8.3.7. Storage of Solid Flammable Scrap:

8.3.7.1. Solid flammable scrap, such as clippings and castings, shall be stored in noncombustible bins and containers pending salvage.

8.3.7.2. Do not allow oily rags, packing materials, and similar combustibles in storage bins or areas storing flammable solid scrap.

8.3.7.3. Solid scrap shall be treated IAW Section 8.2. of this DAFB Instruction.

8.3.8. Storage of Flammable Solid Powder:

8.3.8.1. Buildings used to store Flammable solid powders shall be of noncombustible, single-story construction.

8.3.8.2. If the facility is fully sprinklered and is storing flammable solids, that area or portion of the sprinkler system where the flammable solids are stored, will be segregated from the main sprinkler system by a manual PIV in the closed position and will be tagged as such.

8.3.8.3. Flammable solid powders shall be stored in steel drums or other closed containers. Keep these containers tightly sealed and stored in dry locations.

8.3.8.4. As necessary, flammable solid powder storage areas shall be checked for water leakage. If an area is found to have a water leak, an emergency work order will be initiated to correct the problem and the materials moved as far as possible from the source of the leak.

8.3.8.5. Areas that are routinely used for the storage of flammable solid powders shall be considered Class II, Group E, IAW NFPA 70.

8.3.8.6. Suitable fire extinguishment material shall be readily available in these locations. See Section 8.10.

8.3.8.7. Where flammable solid powder in drums is stacked for storage, the maximum height shall not exceed 18 feet (5.5 m). Stacked storage shall be done in such a manner as to ensure stability. Under no circumstance shall containers be permitted to topple over. The safest man-

ner of storage is achieved using no stacking.

8.3.9. Storage of Finished Products:

8.3.9.1. This section shall apply to the storage of flammable solids in warehouses, wholesale facilities and retail outlets, in the form of finished parts in which flammable solids make up the major portion of the articles on a volumetric basis.

8.3.9.2. Separate storage in quantities greater than 50 cubic feet (1.4 m^3) from other storage of materials that are either combustible or in combustible containers by aisles with a minimum width equal to the height of the piles of flammable solid products.

8.3.9.3. Separate flammable solid products stored in quantities greater than 1000 cubic feet (28 m^3) into piles, each not larger than 1000 cubic feet (28 m^3), with the minimum aisle width equal to the height of the piles.

8.3.9.4. When storing flammable solid products in quantities greater than 1000 cu ft (28 m^3) in a building of combustible construction, and other flammable solid products, packed in combustible crates or cartons are stored within 30 feet (9 m), protect the storage area with automatic sprinklers.

8.3.10. Portable Fire Extinguishers for Use on Flammable Solids:

8.3.10.1. Provide portable fire extinguishers IAW NFPA 10, Standard for Portable Fire Extinguishers. Do not provide water based or CO_2 extinguishers in areas containing flammable solids in fines, chips, pigs, ingots, billets, clippings, castings or powders.

8.3.10.2. If portable extinguishers are to be used on flammable solid fires, they shall be approved for use on Class D fires. The owner of the process, based on the flammable solid being stored, will make the proper agent type available.

8.3.10.3. Dry sodium chloride, Lith-X, Met-L-X or other dry powders or compounds suitable for extinguishment or containment of flammable solid fires may substitute for Class D fire extinguishers. Store these alternative agents in a manner that ensures the agent's effectiveness. Keep shovels or scoops readily available adjacent to the containers. Clearly define all extinguishing agent storage areas.

8.3.11. Fire Prevention and Fire Protection Measures Concerning Flammable Solids:

8.3.11.1. The provisions of this section shall apply to all flammable solid production processes, handling and storage operations.

8.3.11.2. Buildings shall comply with the applicable provisions of NFPA 101.

8.3.11.3. Hot work permits shall be required in designated areas that contain exposed flammable solid fines or dust where hot work is conducted. Thoroughly clean all hot work areas that require a permit of flammable solid fines or dust before performing hot work.

8.3.11.4. Maintain good housekeeping practices. Store supplies in an orderly manner with properly maintained aisles to permit regular inspection and segregation of incompatible materials. Limit supplies of materials in flammable solid processing areas to amounts necessary for normal operation.

8.3.11.5. As frequently as conditions warrant, carry out regular periodic cleaning of flammable solid dust and fines from buildings and machinery. Remove dust and fines to a safe storage

or disposal area. Consider the potential ignition sources associated with the operation of equipment during the cleaning operation.

8.3.11.6. Conduct regular inspections to detect the accumulation of excessive flammable solid dust, chips, or fines on any portions of buildings or machinery not regularly cleaned in daily operations. Keep records of these inspections and file in the Facility/Building Manager's fire prevention folder.

8.3.11.7. Do not discard combustible materials in containers used for the collection of dust, swarf or turnings.

8.3.11.8. Clean-up oil and other liquid spills immediately.

8.3.11.9. Electrically bond and ground boring, crushing and drying equipment to prevent accumulation of static electricity.

8.3.11.10. All electrical equipment and wiring in flammable solid production, processing, handling and storage facilities shall comply with NFPA 70.

8.3.11.11. Use non-sparking tools and utensils in handling flammable solid powders.

8.3.11.12. Electrically bond and ground all metal objects or equipment used in flammable solid operations to prevent accumulation of static electricity.

8.3.11.13. In the case of an emergency where the collection and storage of flammable solids are in containers, ensure material-handling equipment with sufficient capability to remove any container from the immediate area readily available.

8.3.11.14. Keep areas used for torch cutting of massive pieces of scrap free of combustible materials.

8.3.11.15. As conditions warrant, conduct systematic cleaning of the entire building containing dust-producing equipment, including roof members, pipes, conduits, etc. Limit cleaning methods to those methods that minimize the probability of having a fire or explosion, as determined by a person knowledgeable in the properties of flammable solid dust.

8.3.11.16. At a minimum, remove sludge daily from dust separators and vacuum-cleaning system precipitators, as well as fines and shavings that are wet. Use covered, vented steel containers to transport collected sludge and/or fines or shavings to a safe storage area or for disposal. Dispose of sludge and/or shavings or fines IAW with the Base Environmental Management directives.

8.4. **Compressed Gases and Cryogenic Liquids:**

8.4.1. For the purposes of this DAFB Instruction, compressed gas is defined as: Any material or mixture having, in a container, an absolute pressure exceeding 40 psi at 70° F (21.1° C) or regardless of pressure, at 70° F, an absolute pressure exceeding 104 psi at 130° F (54.4° C) or a liquid having a vapor pressure exceeding 40 psi at 100° F (37.8° C), as determined by ASTM D-323-72. A cryogenic liquid is a liquid having a Boiling point below -150° F (-101° C) at 14.7 psia (an absolute pressure of 101 kPa).

8.4.2. Locate, store, utilize, inspect, and transport compressed gas, cryogenic liquid cylinders and pressurized storage tanks IAW NFPA Standard 50A, *Gaseous Hydrogen Systems at Consumer Sites*; NFPA Standard 51, *Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cut-*

ting, and Applied Processes; NFPA Standard 55, *Compressed and Liquefied Gases in Portable Cylinders;* NFPA Standard 58, *Liquefied Petroleum Gas Code*; DOD 4145.19-R-1, section 5-405, AFOSH 91-105, AFJMAN 23-227(I), *Storage and Handling of Liquefied and Gaseous Compressed Gasses and Their Full and Empty Cylinders;* 49 CFR parts 100 to 179, 29 CFR 1910.101, 102, 103, 104, 105, 111 and Compressed Gas Association Pamphlets C-6-1968 and C-8-1962, and this DAFB Instruction.

8.4.3. The Department of Transportation (DOT) divides compressed gases into 3 subclasses:

8.4.3.1. Division 2.1 - Flammable Gases.

8.4.3.2. Division 2.2 - Non-Flammable Gases.

8.4.3.3. Division 2.3 - Gases which are toxic or poisonous by inhalation.

8.4.4. Non-liquefied compressed gases, liquefied compressed gases, compressed gases in solution and cryogenic liquids fall within one of the three subclasses.

8.4.4.1. Quantities exempt from the requirements of this DAFB Instruction in industrial, mercantile and storage occupancies are listed in **Table 4.** below.

Table 4. Exempt Quantities.

Type of Gas	Unsprinkled Areas		Sprinklered Areas	
	No Cabinet	Cabinet	No Cabinet	Cabinet
Toxic Gas (Health 4*)	0 SCF	20 SCF	0 SCF	40 SCF
Toxic Gas (Health 3*)				
(Liquefied)	100 lb.	200 lb.	100 lb.	200 lb.
(Compressed)	400 SCF	650 SCF	400 SCF	650 SCF
Pyrophoric Gas	500 SCF	500 SCF	1,500 SCF	1,500 SCF
Flammable Gas				
(Liquefied)	100 lb.	100 lb.	100 lb.	100 lb.
(Compressed)	400 SCF	400 SCF	400 SCF	400 SC
Oxidizing Gas	400 SCF	400 SCF	400 SCF	400 SCF
Nonflammable Gas	1,000 SCF	1,000 SCF	2,000 SCF	2,000 SCF
* Health hazard rating in accordance with NFPA 704 Standard System for the Identification of the Fire Hazards of Materials.				

8.4.4.2. Quantities exempt from the requirements of this DAFB Instruction in occupancies other than industrial, mercantile and storage are listed in **Table 5.** below.

Table 5. Exempt Quantities for Other Occupancies.

Gas	Quantities
Toxic Gas (Health 4*)	0 SCF
Toxic Gas (Health 3	
(Liquefied)	100 lb.
(Compressed)	400 SCF
Pyrophoric Gas	0 SCF
Flammable Gas	
(Liquefied)	5 lb.
(Compressed)	75 SCF
Oxidizing Gas	400 SCF**
Nonflammable Gas	400 SCF
* Health hazard rating in accordance with NFPA 704	
** Unlimited for residential health care applications	

8.4.5. General Compressed Gas Cylinder Storage and Use Requirements:

8.4.5.1. Outdoor Storage: Outdoors storage areas shall have a minimum of 25 percent of the perimeter open to the atmosphere. Incorporation of chain link fence, lattice construction, open block or similar materials for the full height and width of the opening of this space is permitted.

8.4.5.1.1. Keep storage areas clear of dry vegetation and combustible materials for a minimum distance of 15 feet (4.6 m).

8.4.5.1.2. Do not place cylinders stored outside on the ground (earth) or on surfaces where water can accumulate.

8.4.5.1.3. Provide storage areas with physical protection from vehicle damage.

8.4.5.1.4. Do not cover storage areas with canopies of noncombustible construction.

8.4.5.1.5. Cylinders stored out of doors will comply with **Table 6.**

8.4.5.2. Indoor Storage:

8.4.5.2.1. Arrange cylinders stored within heated indoor storage areas so that the stored cylinders or other containers cannot be spot heated or otherwise heated above 125° F (51.7° C).

8.4.5.2.2. Store cylinders in designated areas, away from elevators, stairs or gangways.

8.4.5.2.3. Locate assigned storage spaces where cylinders will not be knocked over, damaged by passing or falling objects or subject to tampering by unauthorized persons.

8.4.5.2.4. Area managers' storing/using cylinders shall visually inspect the compressed gas cylinders under their control to determine that they are in a safe condition. Conduct visual and other inspections as prescribed in the Hazardous Materials Regulations in 49

CFR Parts 171-179 and 14 CFR Part 103. Where those regulations are not applicable, conduct visual and other inspections IAW Compressed Gas Association Pamphlets C-6-1968 and C-8-1962.

8.4.5.2.5. In-plant handling, storage and utilization of all compressed gases in cylinders, portable tanks, rail tank cars or motor vehicle cargo tanks shall be IAW Compressed Gas Association Pamphlet P-1-1965.

8.4.5.2.5.1. **Table 6.** below lists separation distances for gas cylinders by hazard.

Table 6. Separation Distances for Gas Cylinders.

Gas Hazard	Category	Nonflammable	Oxidizing	Flammable	Pyrophoric
Toxic	C	20 ft*	20 ft*	20 ft*	---
Pyrophoric	C	20 ft*	20 ft*	20 ft*	
Flammable	C	20 ft*	---	20 ft*	20 ft*
Oxidizing	C	---	20 ft*	20 ft*	20 ft*
Nonflammable	---	C	C	C	C
C: Compatible. Cylinders of these hazard ratings may be stored adjacent to each other.					

EXCEPTION: This distance shall be permitted to be reduced without limit when separated by a barrier of noncombustible materials at least 5 feet (1.5m) high having a fire resistance rating of at least one hour.

8.4.5.2.5.2. All quantities of compressed and liquefied gases stored in separate industrial, mercantile or other storage facilities are included in the requirements of this instruction, except for the quantities listed in **Table 6.**

8.4.5.2.6. When two or more compressed gases are stored in a gas cabinet, the gases must be compatible (see **Table 6.**).

8.4.5.2.7. Spill control, drainage, and secondary containment are not required for the storage of compressed gases.

8.4.5.2.8. Floors of storage areas shall be of noncombustible construction.

8.4.5.2.9. Design and construct shelves for storage of cylinders of noncombustible materials and capable of supporting the weight of the cylinders stored.

8.4.5.2.10. For separation from incompatible or combustible materials, storage of compressed gases shall be either:

8.4.5.2.10.1. Segregated from any incompatible or combustible materials storage by a minimum of 20 feet (6.1m).

8.4.5.2.10.2. Isolate from any incompatible or combustible materials storage by a barrier of noncombustible material at least five feet (1.5m) high and having a minimum fire resistance rating of one hour.

8.4.5.2.10.3. **Table 7.** below lists location preferences of flammable gas storage areas.

Table 7. Location Preferences of Flammable Gas Storage Areas.

	Total Volume of Flammable Gas (SCF)		
Location	**Up to 2,500 SCF**	**2,501 to 5,000 SCF**	**In Excess of 5,000 SCF**
Outdoors	I	I	I
In a Separate Building	II	II	II
In a Separate Room	III	III	III
Inside Buildings Not in a Separate Room and Exposed to Other Occupancies	IV	Not Permitted	Not Permitted

8.4.6. Flammable Gases: The following general requirements for storage of flammable gases shall apply:

8.4.6.1. The storage location of non-liquefied flammable gas cylinders in buildings shall be determined by the total volume of flammable gas and shall be in the order of preference as indicated by Roman numerals in **Table 7.**

8.4.6.2. Storage of compressed flammable gases in other than industrial/mercantile and storage occupancies shall not exceed the quantities listed in **Table 7.** Limit storage of compressed flammable gases in mercantile and business occupancies to 400 SCF (11.3 Sm^3). Storage of liquefied flammable gases in all occupancies shall be IAW NFPA 58.

8.4.6.3. Electrical equipment shall conform to the provisions of NFPA 70, Article 501 for Class I, Division 2 locations.

8.4.6.4. No smoking and open flames in storage areas or within 50 feet of storage areas.

8.4.6.5. Store gas cylinders at a minimum distance of 20 feet (6.1m) from storage of flammable and combustible liquids and solids.

8.4.6.6. Store liquefied flammable gas cylinders in the upright position or such that the pressure relief valve is in direct communication with the vapor space of the cylinder.

8.4.6.7. Storage of multiple groups of cylinders of flammable gases, each 2500 SCF (70.79 Sm^3) or less, in one fire area shall be permitted where the groups are separated by a minimum distance of 100 feet (30.5m) (For exceptions, see NFPA 55, Section 2-2.1.7).

8.4.6.8. Do not store different flammable gases together in a group.

8.4.6.9. The following requirements shall apply to the storage of flammable gases between 2501 SCF (70.82 Sm^3) and 5000 SCF (141.6 Sm^3) in any fire area:

8.4.6.9.1. Store gas cylinders in a room or enclosure with a minimum one-hour fire resistance rating (For exceptions, see NFPA 55, Section 2-2.2.1).

8.4.6.9.2. Multiple groups of cylinders within a sprinklered fire area shall be permitted where the minimum distance of 100 feet (30.5m) separates the groups (For exceptions, see NFPA 55, Section 2-2.2.2).

8.4.6.10. Provide gas cylinder storage rooms with natural or mechanical ventilation designed

to provide a minimum of 1 cfm per square foot (o.3 m^3/m^2) of floor area. Ventilation systems shall discharge a minimum of 50 feet (15m) from the intakes of air handling systems, air conditioning equipment and air compressors.

8.4.6.11. The following requirements shall apply to the storage of flammable gases greater than 5000 SCF (141.6 Sm^3), in any location:

8.4.6.11.1. Store gas cylinders in a room or enclosure with a minimum fire resistance of two hours. At least one wall of the room shall be an exterior building wall.

8.4.6.11.2. Provide gas cylinder storage rooms with a sprinkler system design in accordance with NFPA 13. A sprinkler density of at least 0.30 gpm per square foot (0.3 m^3/m^2) of floor area is required. Ventilation systems shall discharge at a minimum of 50 feet (15m) from intakes of air handling systems, air conditioning equipment and air compressors.

8.4.7. Toxic Gases: In addition to the requirements of section 8.4.5. of this DAFB Instruction, the following specific requirements for storage of toxic gases shall apply.

8.4.7.1. Equip indoor storage areas used for toxic gases with a continuous gas detection system that provides an alarm to warn of the presence of toxic gases in levels that present a hazard to life (For exceptions, see NFPA 55, Section 3-1.1).

8.4.7.2. Install exhaust ventilation systems in all indoor areas used for toxic gases (For exceptions, see NFPA 55, Section 3-1.2).

8.4.7.3. Exhaust ventilation systems for indoor toxic gas storage shall comply with the following, except where natural ventilation prevents toxic accumulation of gases being stored:

8.4.7.3.1. Where gas cabinets are not used, operate mechanical ventilation continuously at a rate of not less than 1 cfm per square foot (0.3 m^3/m^2) of floor area of the storage area. (For exceptions see NFPA 55, Section 3-1.3 9(a))

8.4.7.3.2. Provide a manual ventilation shutoff outside the room adjacent to the access door into the room in a location approved by the authority having jurisdiction. Label the switch "Ventilation System Emergency Shutoff".

8.4.7.3.3. Exhaust ventilation shall not recirculate within a room or building.

8.4.7.3.4. Ventilation shall not be in operation if toxic gas is not stored within the room or building.

8.4.7.4. Locate outdoor storage of toxic gases 75 feet (22m) from a line of property that may be built upon, public ways, places of public assembly and buildings not associated with the manufacturer or use of the gases in storage. Secure such storage areas from unauthorized access.

8.4.7.5. While in storage or in handling cylinders of toxic gases shall have valve protection devices or caps and gas-tight valve outlet caps or plugs in place. This shall apply to all cylinders whether full, partially full or empty.

8.4.7.6. Health 4 Storage Requirements: User locations storing toxic gases with and NFPA 704 health hazard rating of "4" shall meet the following requirements:

8.4.7.6.1. Storage within buildings shall be in gas cabinets or exhausted enclosures having positive exhaust ventilation.

8.4.7.6.2. When storage is not in buildings, provide at least one gas cabinet or exhausted enclosure for the handling of leaking cylinders. Locate the cabinet or enclosure within or adjacent to the outdoor storage area.

8.4.7.6.3. Connect gas cabinets or exhausted enclosures to treatment systems.

8.4.7.7. Health 3 Storage Requirements: User locations storing toxic gases with an NFPA 704 health hazard rating of 3 shall have equipment to prevent leaking cylinders from escaping into the building or atmosphere on site or readily available.

8.4.8. Hazard Identification:

8.4.8.1. Place hazard identification signs at all entrances to locations where compressed gases are produced, stored, used or handled (See exception, NFPA 55, Section 4-1.1).

8.4.8.2. Do not obscure or remove signs. Signs shall be in English as a primary language or in symbols.

8.4.8.3. Post signs prohibiting smoking or open flames within 50 feet in areas where toxic, flammable, oxidizing or pyrophoric gases are produced, handled, stored or used.

8.4.8.4. Mark and label individual compressed gas cylinders in accordance with DOT and OSHA/AFOSH requirements.

8.4.8.5. Do not alter or remove labels applied by gas manufacturer or base hydrostatic testing shop to identify the compressed or liquefied gas cylinder contents.

8.4.9. Compressed Gas Cylinders, General Requirements:

8.4.9.1. Cylinders shall be designed, fabricated, tested and marked (stamped) IAW the U.S. Department of Transportation (DOT), Transport Canada (TC) or the Rules for the Construction of Unfired Pressure Vessels, Section VIII, ASME Boiler & Pressure Vessel Code.

8.4.9.2. Return defective cylinders to the supplier. Suppliers shall repair the cylinder; remove it from service or dispose of it in an approved manner.

8.4.9.3. Treat compressed gas cylinders having residual product as full except when being examined, serviced or refilled by a gas manufacturer or distributor.

8.4.9.4. Where compressed gas cylinders are designed to accept valve protection caps, the user shall keep such caps on compressed gas cylinders at all times except when being filled or connected for use.

8.4.9.5. Where gas tight valve outlet caps are provided, the user shall keep such devices on the valve outlet at all times except when being filled or connected for use.

8.4.9.6. Secure compressed or liquefied gas cylinders in use or in storage to prevent them from falling or knocked over (For exceptions, see NFPA 55, Section 6-6).

8.4.9.7. Store or use compressed gas cylinders in the horizontal position. Store or use all liquefied gas cylinders or gas in solution cylinders (acetylene) in the upright position (Excluding LPG powered forklifts).

8.4.9.8. Do not use compressed gas cylinders exposed to fire until they are re-qualified in accordance with the pressure vessel code under which they were manufactured.

8.4.9.9. Do not place compressed gas cylinders where they could become part of an electrical circuit.

8.4.9.10. Store compressed gas pesticides/poisons (not including aerosols) away from heat (steam pipes, heaters, direct sun) in an outdoor covered area.

8.4.9.11. Label cylinders IAW DOT requirements to show whether they are empty or full. Tightly close cylinders using a safety cap when not in use.

8.4.9.12. Separate cylinders by type, contents, and full or empty status. Separate compressed gas pesticide/poisons from other compressed gases by pipe railings or other effective means acceptable to the Base Fire Department.

8.4.10. Fire Safety Precautions:

8.4.10.1. No Smoking or open flames within 50 feet of any area where flammable, oxidizing, pyrophoric or toxic compressed gases are stored.

8.4.10.2. Where static electricity may ignite flammable gas, provide means to prevent a static discharge.

8.4.10.3. Install electrical equipment and wiring IAW NFPA 70 in areas where flammable gases are produced, stored, handled or used.

8.4.10.4. An automatic fire extinguishing system IAW NFPA 13 or NFPA 15, *Water Spray Fixed Systems* shall protect areas of buildings used for storage of toxic or pyrophoric gases.

8.4.10.5. Fire alarm activation stations or approved emergency signal devices shall be installed adjacent to the exit doors of buildings, outside of rooms or areas where toxic, pyrophoric or flammable gases are used or stored. Activation of the system shall sound a local alarm and transmit alarm to the central fire alarm receiver located at the Fire Alarm Communications Center.

8.4.10.6. An approved, supervised smoke-detection system shall be provided in rooms or areas where flammable, pyrophoric and toxic gases are stored indoors. Activation of the detection system shall sound a local alarm and transmit alarm to a central fire alarm receiver located at the Fire Alarm Communications Center.

8.4.10.7. Manual alarm, emergency signal, detection or automatic fire extinguishing systems shall be supervised by an approved central or remote station service or shall initiate an audible and visual signal at a constantly attended on-site location.

8.4.10.8. Where mechanical ventilation, treatment systems, temperature control, manual alarm, detection or other electrically operated systems are required by provisions of this standard, such systems shall be connected to a standby source of power to automatically supply power in the event of loss of power from the primary source.

8.4.10.9. Design compressed gas cabinets IAW this section and shall meet the following requirements:

8.4.10.9.1. Affix labels with red lettering, minimum one inch (2.5 cm) high on a contrasting background stating "HAZARDOUS - KEEP FIRE AWAY" to the cabinets for the specific items stored.

8.4.10.9.2. Cabinets shall operate at negative pressure in relationship to the surrounding

area.

8.4.10.9.3. Cabinets shall be provided with self-closing limited access ports on noncombustible windows to give access to equipment controls. The average velocity of ventilation at the face of access ports or windows shall be not less than 200 feet per min (fpm) (60.7 m/min) with a minimum of 150 fpm (45.7m/min) at any point of the access port or window.

8.4.10.9.4. Cabinets shall be provided with a treatment system to process all exhausted ventilation from the gas cabinet such that emissions are not a hazard to life. Size the system to treat the total capacity of the largest toxic gas cylinder at the maximum flow rate based on controls in place.

8.4.10.9.5. Cabinets shall be provided with self-closing doors.

8.4.10.9.6. Cabinets shall be constructed of not less than 12-gauge steel, which shall be permitted to be coated to prevent corrosion.

8.4.10.9.7. Cabinets shall be internally sprinklered.

8.5. **Corrosives and Oxidizers:**

8.5.1. Corrosive Material is defined in this DAFB Instruction as: A liquid or solid that causes full thickness destruction of human skin at the site of contact within an exposure period of four hours, or a liquid that has a severe corrosion rate on steel or aluminum, based on the criteria in 49 CFR 173.137(c)(2). Corrosive material is separated into two groups, acids and bases. Acids refer to the end of the pH scale that is from 6 down to 0 and bases have pHs which range from 8 to 15. Oxidizers are materials other than a gas, which may generally by yielding oxygen, cause or enhance the combustion of other materials. Organic Peroxides are defined as any material, other than a gas, that contains oxygen (O) in the bivalent-O-O- structure and which may be considered a derivative of hydrogen peroxide, where one or more of the hydrogen atoms have been replaced by organic radicals.

8.5.2. Corrosives and Oxidizers shall be located, stored, utilized, and transported IAW NFPA Standard 430, *Liquid and Solid Oxidizers;* NFPA Standard 45, *Fire Protection for Laboratories Using Chemicals;* 49 CFR, parts 171-180; 29 CFR 1910.104, 10; AFOSH 91-105 and this Instruction.

8.5.3. The Department of Transportation (DOT) divides oxidizers into two subclasses. They are as follows:

8.5.3.1. Division 5.1 – Oxidizers

8.5.3.2. Division 5.2 – Organic Peroxides

8.5.3.3. Corrosives are all included in the DOT hazard class of 8.0.

8.5.3.4. Classify oxidizers and organic peroxides according to the system described in the following section.

8.5.3.4.1. Class 1: An oxidizer whose primary hazard is that it slightly increases the burning rate but does not cause spontaneous ignition when it comes in contact with combustible materials (Generic Type G).

8.5.3.4.2. Class 2: An oxidizer that will cause a moderate increase in the burning rate or

that causes a spontaneous ignition of combustible materials with which it comes in contact (Generic Types E and F).

8.5.3.4.3. Class 3: An oxidizer that will cause a severe increase in the burning rate of a combustible material with which it comes in contact or that will undergo vigorous self-sustained decomposition due to contamination or exposure to heat (Generic Types C and D).

8.5.3.4.4. Class 4: An oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock. In addition, the oxidizer will enhance the burning rate and can cause spontaneous ignition of combustibles (Generic types A and B).

8.5.3.4.4.1. For a listing of typical oxidizers in the above classes see NFPA 430, Appendix B.

8.5.4. Buildings used to store corrosives and oxidizers shall comply with the following requirements:

8.5.4.1. Limited to one story in height.

8.5.4.2. Constructed of noncombustible or fire-resistant materials to include the floors.

8.5.4.3. Equip with automatic sprinkler protection, supervised by the Base Fire Department central alarm system.

8.5.4.4. Equip with spill containment systems with either drains leading to a holding tank or wall scuppers.

8.5.4.5. Heat with approved heating systems, to prevent freezing of certain acids and oxidizers.

8.5.4.6. Provide ventilation by means of permanent louvered openings at floor level and ceiling levels, other accepted gravity ventilation methods or mechanical ventilation suitable for the location, at a rate of not less than 1 cfm per square foot (0.3 m^3/m^2) of floor area of the storage area.

8.5.4.7. Electrical installation for general-purpose areas and shall conform to the requirements of NFPA 70.

8.5.4.8. Protective clothing, eyewash, deluge shower and self-contained breathing apparatus shall be readily available for operating personnel.

8.5.5. Store different acids separately in designated areas. In lieu of aisle space, use noncombustible barriers up to a minimum of three feet high and sealed at the floor level to obtain maximum storage space.

8.5.6. The arrangement and quantity of oxidizers in storage shall depend upon their classification, type of container, type of storage (segregated, cutoff, or detached), and fire protection as specified in NFPA 430, Chapters 3, 4, 5 and 6.

8.5.7. Store corrosives and oxidizers to avoid contact with incompatible materials such as ordinary combustibles, combustible or flammable liquids, greases and those materials that could react with the corrosive or oxidizer or promote or initiate their decomposition. These shall not include approved packaging materials, pallets or dunage. ***NOTE:*** Corrosives and Oxidizers stored in plastic drums shall only be stored on heavy plastic or nylon type pallets. Do not use wood pallets for this purpose.

8.5.7.1. For assistance in determining compatibility of oxidizers and acids see DOD 4145.R-19-1, Section 5-407, Table 5-5.

8.5.8. Take special care to prevent contamination of corrosives or oxidizers in storage.

8.5.9. Where oxidizers and corrosives are stored in segregated warehouses with flammable liquids, separate the oxidizer and corrosive containers and flammable liquid drums/containers by at least 25 feet (7.6 m). Maintain separation use of dikes, drains and floor slopes to prevent flammable liquid leakage.

8.5.10. Where storing Class 2, Class 3, or Class 4 liquid oxidizers, provides a means to prevent the liquid oxidizer from flowing out of a cutoff area into an area containing incompatible materials.

8.5.11. All storage areas containing corrosives and/or oxidizers shall be conspicuously identified by the words "CORROSIVES" or "CLASS __ OXIDIZERS". If different classes of oxidizers are stored in the same area, mark the area for the most hazardous class present.

8.5.12. All packages shall be approved and individually marked with the chemical name of the corrosive or oxidizer. Affix all original shipping labels, including DOT labels, to the container, and ensure labels are clearly legible.

8.5.13. Where a storage container for solid or liquid corrosives and oxidizers also functions as the shipping container, the container shall meet the requirements of the U.S. DOT or the Canadian Ministry of Transport (Transport Canada).

8.5.14. Tanks and Bins: Tanks and bins used for the storage of bulk solid corrosives or oxidizers shall meet the following requirements:

8.5.14.1. Materials of construction shall be compatible with the corrosive or oxidizer being stored.

8.5.14.2. Design and construct tanks and bins IAW federal, state and local regulations.

8.5.14.3. Equip tanks and bins with an adequately sized vent or other relief device to prevent over-pressurization due to decomposition or fire exposure.

8.5.15. Bulk Liquid Storage: Bulk liquid storage is the storage of more than 600 gals (U.S.) (2271 L) in a single container. Install, label, dice, service, and maintain all bulk liquid storage tanks IAW federal, state and local regulations.

8.5.16. Bulk Solid Storage: Bulk solid storage is the storage of more than 6000 lbs. (2722 kg) in a single container. Install, label, service, and maintain all bulk solid storage containers IAW federal, state and local regulations.

8.5.17. Retail Storage of Oxidizers and Corrosives:

8.5.17.1. Shelves and vertical barriers placed between incompatible materials shall be solid and of noncombustible construction.

8.5.17.2. Solid oxidizers and corrosives shall not be stored directly beneath incompatible liquids.

8.5.17.3. Shelves shall be no greater than 24 inches (61 cm) deep.

8.5.17.4. Storage shall be no greater than 6 feet (1.8 m) high.

8.5.17.5. The total amount of corrosives and oxidizers in all classes shall be limited to 2 tons (1814 kg) in non-sprinklered areas and 4 tons (3630 kg) in sprinklered areas. Design sprinklers for the most severe oxidizer class stored.

8.5.17.6. The quantities provided for sprinklered retail sales areas shall be permitted to be applied to a maximum of two sales areas within one retail sales store, if the two retail sales areas are separated from each other by a fire partition having at least a one hour fire resistance rating.

8.5.18. Where two or more different classes of oxidizers are stored in the same segregated, cutoff or detached area, the maximum quantity permitted for each class shall be limited to the sum of the maximum proportion permitted for that class. Do not exceed 100 percent of the total of the proportional amounts.

8.5.19. Heating and Electrical Installations:

8.5.19.1. Arrange heating so that stored materials cannot be placed in direct contact with heating units, piping, and ducts. Separate corrosives or oxidizers so that they cannot be heated to within 25° F (14° C) of their decomposition temperature/boiling point or to 120° F (49° C), whichever is lower.

8.5.19.2. Electrical installations shall be in conformance with NFPA 70.

8.5.20. Maintenance and Repairs:

8.5.20.1. Supervisory personnel and the Base Fire Department will approve maintenance work in an oxidizer/corrosive storage area before work begins.

8.5.20.2. Cutting and welding procedures shall be in conformance with NFPA 51B*, Welding, Cutting, Other Hot Work* and AFOSH 91-5*, Welding, Cutting, and Brazing*.

8.5.21. Fire Extinguishing Equipment:

8.5.21.1. Provide manual fire-fighting equipment, in the form of portable water extinguishers, water hose reels stations or cabinets IAW NFPA 10 and NFPA 14, *Standpipe, Private Hydrant, and Hose Systems.*

8.5.21.2. The placement and use of dry chemical extinguishers containing ammonium compounds (Class A: B: C) shall be prohibited in areas where oxidizers/corrosives, that can release chlorine, are stored.

8.5.22. Housekeeping and Waste Disposal:

8.5.22.1. Accumulation of combustible waste in oxidizer/corrosive storage areas shall be prohibited.

8.5.22.2. Spilled oxidizers/corrosives and leaking or broken containers shall be removed immediately to a safe area, if this can be done safely. If in doubt, dial **911** to notify the Base Fire Department.

8.5.22.3. Store used, empty, combustible containers in a detached or sprinklered area.

8.5.22.4. Arrange operations to prevent excessive fugitive dust accumulation.

8.5.22.5. When absorptive combustible packing materials, used to contain water-soluble oxidizers and corrosives, have become wet during fire or non-fire conditions, the oxidizer/corro-

sive can impregnate the packing material. This will create a serious fire hazard when the packing material dries. Wooden pallets exposed to water solutions of an oxidizer/corrosive also can exhibit this behavior. Locate such materials to a safe outside area and disposed of properly.

8.6. **Pesticides and Poisons:**

8.6.1. For the purpose of this DAFB Instruction a "Pesticide" is defined as: Any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest or for use as a plant regulator, defoliant or desiccant. A "restricted use pesticide" is classified under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in 40 CFR, Part 152.175. These pesticides shall be permitted to be purchased and applied by applicators that are certified and licensed IAW United States Environmental Protection Agency (USEPA) regulations.

8.6.2. For the purpose of this DAFB Instruction "Poisonous Materials" is defined as: Material other than a gas, which is known to be so toxic to humans, as to afford a hazard to health during transportation and storage or which, in the absence of adequate data on human toxicity, is presumed to be toxic to humans because it falls within any one of the following categories:

8.6.2.1. Oral Toxicity: A liquid with a $LD_{50,}$ acute oral toxicity of not more than 500 mg/kg, a solid with a LD_{50} or acute oral toxicity of not more than 200 mg/kg.

8.6.2.2. Dermal Toxicity: A material with a LD_{50} or acute dermal toxicity of not more than 1000 mg/kg.

8.6.2.3. Inhalation Toxicity:

8.6.2.3.1. A dust or mist with a LC_{50} or acute toxicity of not more than 1000 mg/kg.

8.6.2.3.2. Material saturated vapor concentration in air at 20° C (68° F), more than one-fifth of the LC_{50} or acute toxicity on inhalation of vapors of not more than 5000 ml/m^3 or:

8.6.2.4. An irritating material, with properties similar to tear gas, which causes extreme irritation in confined spaces.

8.6.3. As defined in this instruction, handle, store, and transport pesticides and poisons on this installation IAW NFPA 434*, Storage of Pesticides;* NFPA 55, 9 CFR, parts 100-179, AFOSH 91-105 and this Instruction.

8.6.4. Hazard Management:

8.6.4.1. No construction or significant modification shall be made to a pesticide/poison storage facility unless the Fire Department engineering section reviews the construction/modification plans. This includes self-help work.

8.6.4.2. All storage facilities shall develop a Hazardous Materials Emergency Response Plan for their particular type of facility prior to any materials being stored. This plan will include review by the Base Hazardous Materials Response Working Group and Fire Department HAZMAT Officer.

8.6.4.2.1. The Emergency Response Plan shall designate an Emergency Response Coordinator. The Coordinator shall be responsible for implementing the Emergency Response Plan and coordinating with outside agencies.

8.6.4.2.2. Equipment and materials necessary for implementing the Emergency Response Plan shall be available and accessible.

8.6.4.2.3. Immediately notify the Base Fire Department (**911**) of any unintentional release of a pesticide or poison that may pose a threat to people, property, the environment or that exceeds the capability of the facility to manage the release.

8.6.4.2.4. The facility/organization responsible for the release shall immediately activate the Emergency Response Plan.

8.6.4.2.5. The Base Hazardous Materials Planning Group shall review the Emergency Response Plan bi-annually or when facilities are modified, whichever is more frequent.

8.6.5. Housekeeping:

8.6.5.1. Accumulation of combustible waste materials in pesticide/poison storage areas is prohibited.

8.6.5.2. Unusable Goods: The disposition of unusable goods shall be permitted IAW the manufacturer's recommendations on the pesticide/poison label, CEV guidance for compliance with Federal EPA regulations or returned to the manufacturer, if possible. Segregate these materials until disposition.

8.6.5.3. Dispose or decontaminate Pesticide/Poison contaminated materials IAW appropriate federal, state, and local regulations, as specified by the manufacturer's instructions. Dispose of contaminated pallets with other pesticide/poison contaminated materials.

8.6.5.4. Immediately correct leaking or damaged containers of pesticides. Without compromising safety, corrective actions include overpacking, repackaging or other approved methods. Segregate and store overpacked material until final disposition, within recommended disposal directions from CEV.

8.6.6. Structures and Buildings:

8.6.6.1. Construct buildings or portions thereof that store pesticides/poisons of noncombustible materials.

8.6.6.2. Construct and maintain floors to contain and control spillage and fire-protection water.

8.6.6.2.1. Recess floors for pesticide/poison storage areas a minimum of four inches (10 cm) or provide a liquid tight sill, raised to a minimum height of four inches (10 cm) to prevent the flow of liquid to adjoining areas.

8.6.6.2.2. Contain Pesticide spills and fire-protection water inside the facility or by a drainage system to outside secondary containment. The capacity of the system shall accommodate the size of the largest pesticide storage container:

8.6.6.2.2.1. Except when plastic containers are used, increase the capacity of the drainage system to contain the expected aggregate volume released under fire conditions and one-half hour of fire-protection water, if applicable; and one-hundred-year rainfall during a 24-hour period, if outdoors.

8.6.6.3. Provide secondary containment for tank trucks, rail cars, or any other transportation vehicle involved in temporary storage of pesticides or poisons at any one facility for three days

or longer.

8.6.7. Ventilation:

8.6.7.1. Indoor storage areas and buildings used for the storage of pesticides or poisons shall be provided with emergency mechanical exhaust ventilation, which shall be manually actuated upon detecting a spill, leak, or release. The ventilation shall be designed to maintain the concentration below the accepted human exposure levels or for a minimum of six air changes per hour, whichever method yields the higher number of air changes.

8.6.7.2. The ventilation system shall be designed to exhaust within six inches (15 cm) of the floor level and air makeup above six feet (1.8 m).

8.6.8. Electrical installations shall be in conformance with NFPA 70.

8.6.9. Illuminated Pesticide/Poison storage areas, as necessary, to allow ready identification of pesticide container labels.

8.6.10. Control of Ignition Sources:

8.6.10.1. Prohibit smoking in all storage areas containing pesticides/poisons.

8.6.10.2. Place "No Smoking" signs conspicuously within storage areas and at all entrances to storage areas.

8.6.10.3. Cutting and welding procedures shall comply with NFPA 51B.

8.6.11. Loading and unloading facilities shall have secondary containment. The secondary containment shall have a liquid tight floor, sloped or curbed to prevent overflow. This containment can be connected to the drainage system (see 7.6.5.2.) or may be contained at the unloading area.

8.6.12. Hazard Identification. All Pesticide/Poison storage facilities or rooms shall have a hazard identification system.

8.6.12.1. Signs, IAW NFPA 704 shall identify the Pesticide/Poison storage areas, and/or signs that read "PESTICIDES" or "POISONS" in black, two-inch (5-cm) minimum size letters, on a white background, shall be posted. Locate the signs at each entrance/door to an area that stores or uses Pesticides/Poisons and on all four approaches to the facility, if the entire facility is used for the purpose of storing or handling Pesticides/Poisons. Additionally, locate the signs to comply with EPA requirements.

8.6.12.2. Container Labels. Each container shall have a legible FIFRA label on the outside of the container that is visible from ordinary areas of approach.

8.6.13. Training. Facilities storing Pesticides/Poisons shall have a training program. Base the training on the Federal HAZCOM and 29 CFR 1910.1200, OSHA Hazard Communication Training Program, and include current Material Safety Data Sheets (MSDS) and other information supplied by manufacturers.

8.6.14. Storage Requirements:

8.6.14.1. A liquid-tight wall shall separate Pesticides/Poisons storage from food and personal contact items, such as clothing, linens, furniture, animal feeds, and animal health products.

8.6.14.2. Incompatible materials shall not be stored within 25 feet (7.6 m) of Pesticide/Poison storage areas unless separated by a liquid-tight wall with fire resistance rating of one hour.

8.6.14.3. Store Pesticides/Poisons only on the first floor. The Base Fire Department will approve any other storage or occupancy in a basement below the pesticide storage before the storage takes place.

8.6.14.4. Pesticides/Poisons shall be stored to prevent harmful and unnecessary contact with moisture, excessive heat, or freeze/thaw cycles, which can affect either container integrity or product stability.

8.6.14.5. Treat empty, unrinsed containers as full containers.

8.6.14.6. Compressed Gas Pesticides/Poisons:

8.6.14.6.1. Store Compressed Gas Pesticides (not including aerosols) away from heat (steam pipes, heaters, direct sun) in an outdoor, covered area.

8.6.14.6.2. Tightly close containers and provide a safety cap when not in use, whether full or empty, and provide labeling IAW DOT labeling requirements, and to indicate whether the individual container is full or empty.

8.6.14.6.3. Separate containers by type, contents, and full or empty status. Separate Compressed Gas Pesticide/Poisons from other compressed gases by pipe railings or other effective means acceptable to the Base Fire Department.

8.6.15. Storage Arrangements:

8.6.15.1. Containers shall be stacked stable and limited in height, based on container integrity.

8.6.15.2. Where an original shipping container has been opened, the individual container shall be placed on stable shelving and tightly re-closed or resealed.

8.6.15.3. Flammable or combustible Pesticides/Poisons storage shall comply with Chapter 8.2. of this DAFB Instruction.

8.6.15.4. Nonflammable Pesticides/Poisons shall be stored IAW NFPA 434, *Storage of Pesticides* and Chapter 6 of this Instruction.

8.6.15.5. Rack storage of nonflammable Pesticides/Poisons shall comply with NFPA 434.

8.6.15.6. Bulk storage of flammable and combustible Pesticides/Poisons shall comply with NFPA 30, and Chapter 8.2. of this Instruction.

8.7. **Radioactive Materials:**

8.7.1. For the purpose of this DAFB Instruction, "Radioactive Material" is defined as: Any material having a specific activity greater than 70 Bq per gram (0.002 micro curie per gram) and any material which emits, by spontaneous nuclear disintegration, corpuscular or electromagnetic emanation. Radioactive Materials are shipped and labeled under one of three divisions, based on their radiation level at the surface of the package and the transportation index and are listed in **Table 8.** below.

Table 8. Shipping and Labeling Requirements.

Division	Label Color	Activity Levels
I	White	Activity levels less than or equal to 0.5 mrem/h (0.005 mSv/h).
II	Yellow	Activity levels greater than 0.5 mrem/h, but less than 50 mrem/h (0.05 mSv/h).
III	Yellow	Activity levels greater than 50 mrem/h but less than or equal to 200 mrem/h (2 mSv/h).
III Special Provisions	Yellow	Activity levels greater than 200 mrem/h but less than or equal to 1000 mrem/h (10 mSv/h).

8.7.2. Radioactive Materials shall be received, stored, packaged, handled, shipped and disposed IAW DOD Supply System, MIL STD-129, MIL STD-1458, AFJMAN24-204(I), *Preparing Hazardous Materials for Military Air Shipments;* 49 CFR, Parts 100-179, OSHA 29 CFR 1910.96, 29 CFR 1926.53 and this Instruction.

8.7.3. The transport index (TI) means the dimension less number (rounded up to the next tenth) placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The TI is determined as follows:

8.7.3.1. For nonfissile material packages, the number is determined by multiplying the maximum radiation level in milliSievert(s) per hour at one meter (3.3 feet) from the external surface of the package by 100 (equivalent to the maximum radiation level in millirem per hour at one meter (3.3 feet) or

8.7.3.2. For fissile material packages, the number is determined by multiplying the maximum radiation level in milliSievert per hour at one meter (3.3 feet) from any external surface of the package by 100 (equivalent to the maximum radiation level in millirem per hour at one meter (3.3 feet)). For critical control purposes, the number obtained by dividing 50 by the allowable number of packages that may be transported together, whichever number is larger.

8.7.4. Storage of Radioactive Materials:

8.7.4.1. Where containers are used for storage, the labels required by 29 CFR 1926.53 should state the quantities and kinds of radioactive materials in the containers, and the date of the measurement of the quantities.

8.7.4.2. Rooms or other areas in onsite medical facilities are not required to be posted with caution signs if personnel are in attendance to take the necessary precautions to prevent the exposure of any individual to Radioactive Materials or radiation in excess of the limits established in 29 CFR 1926.53.

8.7.4.3. Caution signs are not required to be posted at areas or rooms containing Radioactive Materials for periods less than 8 hours provided that:

8.7.4.3.1. The materials are constantly attended, during such periods, by an individual who shall take the precautions necessary to prevent the exposure of any individual to Radioactive Materials or radiation in excess of the limits established in 29 CFR 1920.53.

8.7.4.3.2. Such area or room is subject to the control of DAFB.

8.7.4.4. Areas, other than exempted above, that store or use Radioactive Materials will adhere to the following area labeling requirements:

8.7.4.4.1. Each radiation area shall be conspicuously posted with a sign or signs bearing the Radiation Caution Symbol and the words: "CAUTION RADIATION AREA".

8.7.4.4.2. Each high radiation area shall be conspicuously posted with a sign or signs bearing the Radiation Caution Symbol and the words: "CAUTION HIGH RADIATION AREA".

8.7.4.4.3. Each airborne radioactivity area shall be conspicuously posted with a sign or signs bearing the Radiation Caution Symbol and the words, "CAUTION AIRBORNE RADIOACTIVITY AREA".

8.7.4.4.4. Each area or room in which Radioactive Materials are used or stored and contains Radioactive Materials, other than natural Uranium or Thorium, in amounts exceeding 10 times the quantity specified in Appendix C to 10 CFR, Part 20, shall be conspicuously posted with a sign or signs bearing the Radiation Symbol and the words, "CAUTION RADIOACTIVE MATERIALS".

8.7.4.4.5. Each area or room in which natural Uranium or Thorium is used or stored in an amount exceeding 100 times the quantity specified in 10 CFR, Part 20, shall be conspicuously posted with a sign or signs bearing the Radiation Symbol, and the words, "CAUTION RADIOACTIVE MATERIALS".

8.7.4.4.6. Each container transported, stored or used for a quantity of Radioactive Material, other than natural Uranium or Thorium, greater than the quantity specified in Appendix C to 10 CFR, Part 20, shall bear a durable, clearly visible label bearing the Radiation Caution Symbol and the words, "CAUTION RADIOACTIVE MATERIALS".

8.7.4.4.7. Each container in which natural Uranium or Thorium is transported, stored, or used in a quantity greater than 10 times the quantity specified in Appendix C to 10 CFR, Part 20, shall bear a durable, clearly visible label with the Radiation Caution Symbol and the words, "CAUTION RADIOACTIVE MATERIALS".

8.7.5. The Building/Facility Manager having jurisdiction will report buildings and/or rooms containing radioactive substances to the Base Fire Department. The Building/Facility Manager will provide a detailed floor plan drawing indicating the exact location of the Radioactive Material to the Base Fire Department. Notify the Base Fire Department any time Radioactive Materials are moved or removed from the facility or area.

8.7.6. Refer matters not covered by current service/agency directives or this DAFB Instruction to the local Radiological Protection Officer or Safety Office, for specific instructions/directions.

8.8. **Hazardous Cargo Movements:**

8.8.1. For the purpose of this DAFB Instruction Hazardous Cargo is defined as: Materials regulated under the above listed hazard classes and materials not regulated under any of the above hazard classes but are defined as other regulated materials (ORMs) according to 49 CFR Parts 100-179, and are being transferred on the installation. This includes hazardous wastes, consumer quantities of hazardous materials, and materials identified in one of the above listed definitions.

8.8.2. The Base Fire Department will be notified of all, other than routine, proposed transfers of oil, gasoline or other Hazardous Materials as defined above. Adhere to the following general guidance:

8.8.2.1. Transfers will be subject to applicable regulations, installation operating instructions and this Instruction.

8.8.2.2. All fire precautions will be observed.

8.8.2.3. A fire watch, approved by the Base Fire Department, will be posted and proper fire extinguishing equipment will be provided.

8.8.2.4. Under special or unusual conditions (i.e., hot refuels/defuels, specialized product transfers), fire fighters and apparatus may be required for stand-by. The Base Fire Marshall or Fire Chief will determine the fire watch requirements.

8.8.3. Notify the Base Fire Department when a contract is awarded to remove bulk hazardous waste shipments (i.e. sludge removal from waste treatment plants) from or transport within this installation. Give this notification at least five (5) working days in advance of the start of the contract.

8.8.4. Shipments of bulk goods received through the DM-HMMS or like system or consumer quantities of hazardous materials received through the Base Exchange or Commissary are exempt from the requirements of this section.

8.8.4.1. When a shipment of Hazardous Material is received or transferred on this installation, the following precautions will be followed:

8.8.4.2. The receiver and shipper of the material will inspect the packaging to ensure that it is in a serviceable condition and that it is properly secured to the pallet, if one is provided. If the package is leaking, do not load or unload the material. Secure the area, perform immediate area evacuation and notify the Base Fire Department at **911**, to report the incident.

8.8.4.3. The shipper/expediter will ensure that the material being transported is in a serviceable condition, the material is secured to the shipping pallet, if provided, and that the material is properly secured to the vehicle.

8.8.4.4. The organizational personnel receiving the material will inspect the shipment for serviceable container conditions and that the material is the proper material ordered. If the material container is defective or leaking, the driver of the vehicle and the receiving personnel shall secure the area. Do not move the vehicle containing the defective/leaking material. Notify the Base Fire Department at **911**, to report the incident. When possible, have the shipping paperwork and any MSDS for the material available for responding Fire Department personnel.

8.9. **Hazardous Materials Operations Requirements:**

8.9.1. This section will provide guidance on miscellaneous procedures and practices related to hazardous materials acquisition, storage, processing, waste disposal and hazmat accumulation points.

8.9.2. Hazardous Materials Management:

8.9.2.1. Order and process all hazardous materials on DAFB through the Hazardous Materials Pharmacy or suitable alternative. The Hazardous Materials Pharmacy will acquire new haz-

ardous materials.

8.9.2.2. All organizations or shops requesting/ordering hazardous materials will ensure that the material is not located on this installation in warehousing, prior to ordering the material. This action is necessary to prevent the accumulation of hazardous materials in storage that may become out-of-date and due to prolonged storage develop into a hazard from age.

8.9.2.3. When a new material is received into inventory, the responsible agency shall have available a MSDS for the product, either in hard copy form or on automated products. This information shall be immediately available for use by the Base Fire Department in the event of a spill or unintentional release.

8.9.2.4. Hazardous materials shall be stored in designated areas when not in use.

8.9.2.5. Arrange Hazardous Material storage areas in such a manner as to not block exits or paths of egress from the room or area. Building/Facility Managers shall be knowledgeable of Hazardous Materials regulations, and procedures affecting the materials they are issuing.

8.9.3. Hazardous Materials Pharmacy, Initial Accumulation Points and Waste Storage Sites (Chemsite):

8.9.3.1. All personnel who manage Hazardous Materials Accumulation Points and Waste Storage Sites shall be trained in hazardous materials/ hazardous waste. Train all personnel who handle hazardous wastes on DAFB Hazardous Waste procedures as outlined in Security Instruction 32-3*, Hazardous Waste, Universal Waste, and Used Petroleum Management Plan.*

8.9.3.2. General Chemsite Inspection Criteria:

8.9.3.2.1. Ground and bond flammable/combustible liquid drums.

8.9.3.2.2. If drum pumps are utilized, ensure that they are properly installed into the drum, and that hoses are retained in the hose holders, i.e., not lying on the floor.

8.9.3.2.3. Remove drum funnels on hazardous waste drums and reinstall the drum bung after each use. The newer types of drum funnel, with the internal drum plugs, are acceptable as long as the drum plug is replaced and tightened after each use.

8.9.3.2.4. Ensure that all containers are in a serviceable condition, not corroded, swelled, or severely damaged. Notify the Fire Department immediately if drums indicate swelling and are in immediate danger of releasing hazardous materials.

8.9.3.2.5. Properly label all drums and containers to show contents and the start date, if applicable.

8.9.3.2.6. Ensure that proper transfer devices are utilized for the material being transferred. (Compatible)

8.9.3.2.7. Keep Chemsite free of trash, and unnecessary combustibles.

8.9.3.2.8. Ensure that grass and weeds around the Chemsite remain trimmed. Coordinate this activity with the Base Grounds Contractor as necessary.

8.9.3.2.9. Ensure that signs on the outside and inside of the Chemsite are in good repair, i.e., "Flammable", "No Smoking" signs, Chemsite Manager Listing and emergency phone numbers, as well as material location signs.

8.9.3.3. Weekly Chemsite Inspection Log Books:

8.9.3.3.1. Ensure weekly inspections are performed and logged as required.

8.9.3.3.2. Have Chemsite Inspection Logbooks readily available for inspection.

8.9.3.3.3. Ensure that if a spill occurs, the spill log is filled out correctly and accurately.

8.9.4. Emergency Notification Procedures: If a spill or release of a material(s) occurs, personnel should:

8.9.4.1. If possible, without danger to yourself, attempt to stop the spread of the material(s) utilizing absorbents or booms. ***NOTE:*** If there is any doubt as to safety of performing this operation, get out of the area and stay out.

8.9.4.2. Evacuate the immediate area.

8.9.4.3. Notify the Base Fire Department (**911**).

8.9.4.4. Provide as much of the following information as possible:

1. State your name and return phone number.
2. Name of the material(s) involved in the incident.
3. Approximate quantity released or being released. If it is a continuous release approximately how much is coming out and how much could be released.
4. Type of container.
5. If the material(s) are on fire or have been involved in a fire or an explosion.
6. If there are any known injured or missing personnel.
7. Provide the response personnel with a MSDS for the material(s) involved.

8.9.5. Chemical Compatibility:

8.9.5.1. Ref AFOSH 91-68*, Chemical Safety,* DOD 4145.19-R-1 or this Instruction.

8.9.5.2. Contact Bioenvironmental or the Base Fire Department for questions regarding compatibility.

8.9.5.3. Ensure that materials of different types and hazardous wastes are properly labeled and stored accordingly.

8.9.6. HAZMAT Accumulation Points:

8.9.6.1. Ensure that satellite site drums are properly labeled.

8.9.6.2. Ensure that drums are stored off the floor on pallets or preferably, spill containment pallets.

8.9.6.3. Ensure that drums remain closed when not in use. Spring loaded lids, on rag, aerosol can, and other approved solid accumulation containers are permissible. ***NOTE:*** Remove the cap and dispensing nozzle from aerosol cans before placing them into a drum.

8.9.6.4. Keep area around drums free from accumulation of trash or debris.

9. Special Operations.

9.1. **Aircraft Servicing and Ground Operations:**

9.1.1. Aircraft fueling and defueling operations will be conducted IAW T.O. 00-25-172; AFOSH 91-38*, Hydrocarbon Fuels—General*, *Chapter 4* and NFPA 407*, Aircraft Fuel Servicing*. Notify the Fire Department of any abnormal fueling, defueling or concurrent servicing operations by direct line.

9.1.2. Allocate flight line 150lb Halon fire extinguishers for aircraft IAW T.0. 00-25B-172. Special C-5 ramp placements will be one on or between each wing tip of the C-5 and one at the nose of the aircraft, to fulfill the requirement for two per C-5 aircraft.

9.1.3. Ground power equipment shall be operated IAW applicable directives. A fire extinguisher will be located near all power units when in operation (AFOSH 91-38 Chapter 4.6.).

9.1.4. There is no smoking on the flight line, within 50 feet of a parked aircraft, on any ramp or maintenance area. Designated smoking areas are located around the jersey barriers of the restricted area.

9.1.5. Fueling operations will terminate immediately when thunderstorms are within 5 nautical miles of the Base.

9.1.6. Ensure internal combustion engine-powered materials handling equipment and vehicles are equipped with flame and spark arrestors on carburetors and exhausts within 50 feet of aircraft or inside aircraft hangars, as prescribed in T.O. 38-1-23*, Inspection and Installation of Exhaust Spark Arrestors and Exhaust Purifiers (Catalytic Mufflers) on Non-aircraft Engines* and applicable NFPA standards.

9.2. **Vehicle & Powered Equipment Fueling/Dispensing Operations:**

9.2.1. Only authorized and properly trained personnel will operate major fueling equipment. Knowledge of the equipment hazards involved and the regulations for handling flammable liquid shall be required. The operator shall be familiar with the location of the nearest telephone, how to call the Fire Department, and location and operation of first aid and firefighting equipment.

9.2.2. Operators of vehicles and mobile equipment shall turn off engines, lights, and radio transmitters before taking on fuel.

9.2.3. Vehicle operators, attendants or others shall not smoke or light a match or lighter during fueling, and there shall be no open flame within 50 ft of the facility complex.

9.2.4. Do not use latching or locking devices that restrict or impede the ability to automatically stop the flow of fuel on any gasoline or other flammable liquid dispensing nozzle. This does not preclude the use of listed and approved automatic nozzles.

9.2.5. Do not operate any vehicle leaking fuel or excessive amounts of oil until necessary repairs have been performed.

9.2.6. If a flammable liquid container is leaking, move to a safe location and transfer the contents to serviceable container. Dispose of leaking containers properly.

9.2.7. Do not use glass or plastic containers, other than plastic containers listed by a nationally recognized testing laboratory (i.e., UL or FM approved), for gasoline.

9.2.8. Do not refuel vehicles transporting explosives with gasoline while explosives are in the vehicle except in an emergency and only with the engine stopped, all lights and radios off, and static grounding devices properly connected.

9.2.9. Do not operate defective or leaking fuel-dispensing equipment (e.g., nozzles, hoses, pumps) until restored to proper operational condition.

9.2.10. Do not use makeshift fuel dispensing or de-fueling arrangements. Fuel dispensing, storage locations, arrangements, and equipment shall conform to requirements of the NFPA. De-fueling into open containers is prohibited.

9.2.11. Automotive vehicles and other spark-producing equipment shall not be operated within 50 feet of any fuel spill involving gasoline or fuels of similar characteristics until the spill has been cleaned up and all flammable vapors have dissipated.

9.2.12. The fueling of lawnmowers and other gasoline powered equipment or dispensing of any flammable liquid shall be conducted outside of all buildings, including garages, basements, attached carports or storage rooms associated with family quarters. Indoor fueling is prohibited. Allow equipment time to cool before refueling.

9.2.13. Only fill portable gas cans while safely situated on the ground. DO NOT fill gas cans while in the back of pickup trucks or other vehicles.

9.3. **POL Bulk Storage Operations:**

9.3.1. For the purposes of this DAFB Instruction, POL storage areas are defined as: Areas which are used for the bulk storage of petroleum, oil or lubricant materials and fueling operations from a bulk source.

9.3.2. Bulk storage, transportation, transfer, handling and inspection of POL products/areas will be performed IAW NFPA 30; NFPA Standard 385*, Tank Vehicles for Flammable and Combustible Liquids;* AFOSH 91-38*,* AFOSH STD 91-105*,* 29 CFR 1910.106, applicable T.O.s and this Instruction.

9.3.3. Only authorized and properly trained personnel shall be permitted to operate major fueling equipment and storage tank facilities. Knowledge of the equipment, hazards involved and the regulations for handling flammable and combustible liquids shall be required. The operator shall be familiar with the nearest telephone or communicating device and how to call the Base Fire Department, the location and operation of first aid equipment and firefighting equipment. Conduct training on an annual basis to ensure operator proficiency.

9.3.4. Facilities:

9.3.4.1. Separate tank vehicles loading/unloading facilities from aboveground tanks, warehouses, other facilities or the nearest line of adjoining property that can be built upon, by a distance of at least 25 feet (7.5 m) for Class I liquids and at least 15 feet (4.6 m) for Class II and Class III liquids. This distance is measured from the nearest fill spout (liquid or vapor) or transfer connection. Utilizing fixed fire protection systems; dikes, fire-rated barriers or any combinations may reduce these distances. Buildings for pumps or shelters for personnel may be a part of the facility.

9.3.4.2. Separate areas where transfer of liquids from one tank container to another container from other operations that might represent an ignition source by distance or by fire resistant

construction. Provide drainage or other means to control spills. Provide ventilation IAW NFPA 30, paragraph **5.3.3.**

9.3.4.3. Fuel Dispensing Equipment:

9.3.4.3.1. Do not operate defective or leaking fuel-dispensing equipment (i.e., nozzles, hoses, pumps, etc.) until restored to proper operational condition.

9.3.4.3.2. Do not use latching or locking devices, which restrict or impede the ability to automatically stop the flow of fuel on any gasoline or other flammable/combustible liquid dispensing nozzle. This does not preclude the use of listed and approved automatic nozzles.

9.3.4.3.3. Do not use makeshift fuel dispensing or de-fueling arrangements. Fuel dispensing, storage locations, arrangements and equipment shall be in conformance with the pertinent requirements of the NFPA, NFPA 30 or other applicable Air Force T.Os or this Instruction. De-fueling into open containers is prohibited.

9.3.4.4. Pumps Piping and Valves on Transfer Equipment:

9.3.4.4.1. Piping, valves and fittings shall be IAW NFPA 30, Chapter 3.

9.3.4.4.2. Positive displacement pumps shall be provided with pressure relief discharging back to the tank, pump, suction, and another permitted location or provided with interlocks to prevent over-pressure.

9.3.4.4.3. Use listed flexible connectors where vibration exists. Only use approved hose at transfer stations.

9.3.4.4.4. Design and arrange equipment to prevent the unintentional escape of liquids and vapors or minimize the quantity escaping, in the event of accidental release.

9.3.4.4.5. Do not use equipment such as piping, pumps, and meters used for the transfer of Class I liquids between storage tanks and the fill stem of the loading rack for the transfer of Class II or Class III liquids.

9.3.4.4.6. All equipment, such as tanks, machinery, and piping, where an ignitable mixture may be present, shall be bonded or connected to a ground. The bond, ground or both shall be physically applied or inherently present by the nature of the installation. Bond electrically isolated sections of metallic piping or equipment to the other portions of the system or individually grounded to prevent hazardous accumulations of static electricity.

9.3.5. Bulk Liquid Transfers (Tanker trucks to or from storage tanks):

9.3.5.1. Filling tank vehicles or bulk tanks through open domes is not permitted. See **9.3.6.** for Static Protection.

EXCEPTION: Emergency transfer of product. Transfer into the tanks of tank vehicles that contain vapor-air mixtures within the flammable range or where the liquid being filled can form such a mixture, shall be by means of a downspout that extends near the bottom of the tank. This precaution is not required when loading liquids that are nonaccumulators of static charges. ***NOTE:*** NFPA 77, *Static Electricity*.

9.3.5.2. When bottom loading a tank vehicle, with or without vapor control, a positive means shall be provided for loading a predetermined quantity of liquid, together with a secondary

shutoff control to prevent over-fill. The connecting components between the loading rack and the tank vehicle required to operate the secondary control shall be functionally compatible. The connection between the liquid loading hose or pipe and the truck piping shall be by means of a dry disconnect coupling.

9.3.5.3. When bottom loading a tank vehicle equipped for vapor control, but vapor control is not used, the tank shall be vented to the atmosphere at a height not lower than the top of the cargo tank of the vehicle to prevent pressurization of the tank. Connections to the plant vapor control system shall be designed to prevent the escape of vapor to the atmosphere when not connected to a tank vehicle.

9.3.5.4. Where flammable and combustible liquids are used or handled, provisions shall be made to promptly and safely confine and dispose of leaks or spills.

9.3.6. Static Protection During Transfer Operations:

9.3.6.1. Where flammable and combustible liquids are transferred, provide bonding of facilities for protection against static sparks during the loading and unloading of tank vehicles through open domes shall be provided.

9.3.6.2. Required protection in **9.3.6.1.** will consist of a metallic bond wire permanently electrically connected to the fill stem or to some part of the rack structure in electrical contact with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle.

9.3.6.3. Such bonding connection shall be made to the vehicle or tank before dome covers are raised and shall remain in place until filling is completed and all dome covers have been closed and secured.

EXCEPTIONS: Bonding is not required:

1. Where vehicles are loaded exclusively with products not having a static accumulation tendency, such as asphalt (including cutback asphalt), most crude oils, residual oils, and water-soluble liquids.

2. Where no Class I liquids are handled at the loading facility and the tank vehicles loaded are used exclusively for Class II and Class III liquids.

3. Where vehicles are loaded or unloaded through closed bottom or top connections, whether the hose or pipe is conductive or nonconductive.

9.3.6.4. Transfer of liquids among vessels, containers, tanks, and piping systems by means of air or inert gas pressure shall be permitted only under the following conditions:

1. The vessels containers tanks and piping systems shall be designed for such pressurized transfer and shall be capable of withstanding the anticipated operating pressure.

2. Safety and operating controls, including pressure relief devices, shall be provided to prevent over pressure of any part of the system.

3. Only inert gas shall be used to transfer Class I liquids. Inert gas shall be used to transfer Class II and Class III liquids that are heated above their flash points.

9.3.7. Fire Prevention and Fire Extinguishing Equipment:

9.3.7.1. Take precautions to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited to, open flames, lightning, hot surfaces, radiant heat, smoking, cutting and welding, spontaneous ignition, frictional heat or sparks, static electricity, electrical sparks, stray currents and heating equipment.

9.3.7.2. Post "No Smoking" signs. Permit smoking only in designated areas.

9.3.7.3. Welding, cutting and similar spark-producing operations shall not be permitted in storage areas containing flammable liquids until an AF Form 592, **USAF Welding, Cutting and Brazing Permit**, is issued to authorize such work.

9.3.7.4. Properly maintain fire protection equipment. Perform periodic inspections and tests IAW both standard practices and equipment manufacturer's recommendations.

9.3.7.5. Maintenance and operating practices shall control leakage and prevent spillage of flammable/combustible liquids.

9.3.7.6. Keep combustible waste materials and residues in operating areas a minimum, store in covered metal containers, and disposed of at least daily.

9.3.7.7. Keep ground areas around POL facilities where liquids are stored, handled, or used free of grass, weeds, trash or other combustible materials. Mangers of POL areas will schedule grass and weed control. The Base Grounds Contractor performs this service.

9.3.7.8. Fire Lanes and aisles established for the movement of personnel shall be clear of obstructions to permit orderly evacuation and ready access for manual firefighting activities.

9.3.7.9. Provide annual training to personnel responsible for the use and operation of fire protection equipment.

9.3.8. Emergency Action Planning

9.3.8.1. Provide a copy of the Emergency Action Plan to the Base Fire Department and keep readily available and update regularly or as needed. Coordinate the plan with the Base Fire Department HAZMAT/Safety Office.

9.3.8.2. The Emergency Action Plan (OSHA requirement) shall include:

The safe shutdown of operations under emergency conditions including actions to be accomplished by plant personnel. This should include spill control procedures pump shut down and emergency transfer system etc.

Provide an approved means for prompt notification of fire spill or other emergencies to personnel within the POL area and to the Base Fire Department.

Contain a general layout map of facility showing roads, buildings, fire hydrants, fire protection features, fuel fill stations, storage tanks, and emergency cut off valves.

Utility maps: Electric, Water, Drainage and Fuel System piping, and tank schematics.

Names and emergency phone numbers of plant management to notify in case of an emergency.

9.3.8.3. Where premises are likely to be unattended for considerable periods of time, post or

locate in a strategic and accessible location a summary of the Emergency Plan. Place this information in the Facility Pre-Fire Plan.

9.3.8.4. Those areas, including buildings, where a potential exists for a flammable/combustible liquid spill shall be monitored as appropriate. Some methods may include; patrols, process monitoring equipment, or gas detectors to continuously monitor the area where facilities are unattended.

9.3.8.5. Listed portable fire extinguishers shall be provided for facilities in such quantities, sizes and types, as may be needed for the special hazards of the operation and storage, as determined by the Base Fire Department and engineering design. Extinguisher types, sizes and locations shall be IAW NFPA 10.

9.3.8.6. Facility and POL area managers shall inspect fire protection equipment monthly, and keep a written or automated product record of the inspections. Make provisions for periodic training, inspection and testing of associated alarms, interlocks and controls.

9.3.8.7. IAW engineering design and technical requirements, provide fire hydrants, with or without fixed monitor nozzles. The number and placement will depend on the hazard of the liquid-processing facility storage or exposure, as determined by the above criteria.

9.3.8.8. Automotive vehicles and other spark-producing equipment shall not be operated within 50 feet of any fuel spill involving gasoline or flammable liquids with similar characteristics until the spill has been properly handled and all flammable vapors have dissipated.

9.4. **Welding, Cutting, and Brazing Operations (See AFOSH 91-5):**

9.4.1. No person shall, at any time, conduct any cutting or welding operation outside of an established properly authorized shop without an approved AF Form 592.

9.4.2. Notify the Base Fire Department when any cutting, welding or brazing is performed outside of an established shop. Before the start of operations, a qualified Fire Department representative will inspect the work site to determine if all necessary fire prevention precautions are taken. If the operation is deemed safe, AF Form 592, signed by the Fire Inspector, will be given to the operator and supervisor. The Base Fire Department will maintain a copy of this form and post one copy at the job site.

9.4.3. Welding, cutting and sweating of copper piping or burning operations shall be under the supervision and control of a competent supervisor.

9.4.4. Handle oxygen, acetylene, and other fuel gases carefully and secure cylinders by lashing, strapping, chaining, or clamping in an upright position. Cap all cylinders during storage and transportation.

9.4.5. Keep oxygen cylinders free of oil and grease at all times (A high-pressure leak from an oxygen cylinder may cause sufficiently rapid oxidation to ignite gasoline, oil, grease, alcohol, or organic material, and result in fire or explosion).

9.4.6. Frequently inspected in use oxygen and fuel gas systems for evidence of leaks in hoses, couplings, valve stems, fittings and other points in the system.

9.4.7. Close acetylene and oxygen valves at the cylinders whenever the equipment is left unattended or work is stopped for more than 15 minutes.

9.4.8. Operators of electric welding equipment, stopping work for any length of time, shall disconnect the equipment from the source of power.

9.5. **Confined Space Operations:**

9.5.1. Anyone conducting any type of work i.e., maintenance or inspection, which requires entry into a confined space shall comply with OSHA 1910.1046, *Confined Spaces and Confined Space Management* for DAFB.

9.5.2. Before entering any confined space the following steps must be completed:

1. Confined space entry permit filled out and a copy kept at the site at all times.
2. Have the minimum number of trained workers and necessary equipment on site before work can begin.
3. Have the minimum number of hours to meet the training requirements determined by OSHA.

9.5.3. Any confined space entry work, which requires a permit, will be coordinated through the Base Safety Office, Bioenvironmental Engineering Office and the Base Fire Department.

9.5.4. Dedicated Rescue Team:

9.5.4.1. For contractor work, a Dedicated Rescue Team at the on-site location (as defined by OSHA) is not provided. The Base Fire Department will respond for emergency services only.

9.5.4.2. Notify the Base Fire Department prior to each entry into a permitted confined space with the number of personnel entering.

9.5.4.3. Notify the Base Fire Department when or each time the area is not occupied (i.e. lunch break, rest period) and when the total operation is complete.

9.5.5. For specific guidance on confined space entry, consult the Confined Space Management Program for DAFB. This Program is available from the Base Wing Safety Office or the Base Fire Department Safety Office.

9.6. **Painting Operations:**

9.6.1. Do not use petroleum based (flammable) spray paint within buildings unless standard spray booths or rooms constructed and arranged IAW NFPA Standard 33*, Spray Application Using Flammable or Combustible Materials* is provided.

9.6.2. Spray booths shall be equipped with an exhaust ventilation system. Fans shall be non-sparking, with explosion-proof fan motors and will be located outside the booth. Install exhaust systems to conform to the standards of NFPA 33.

9.6.3. Filters and filter rolls shall be of noncombustible construction. Inspect filters and filter rolls after each use and remove clogged filters for disposal.

9.6.4. Combustible materials shall not be stored within 3 feet of spray booths.

9.6.5. There will be no smoking within 50 feet of spray booths or spray painting facilities.

9.6.6. Minor touch-ups, involving the use of small aerosol or pressurized spray cans, may be conducted outside of a standard painting spray booth, provided all precautions for adequate ventilation are observed. Such operations shall be very limited in scope.

9.6.7. Paint that requires flammable solvents, thinners or flammable cleaners shall not be used without first extinguishing or removing all potential sources of ignition in the immediate area.

9.6.8. Handle, store, dispense, and use flammable thinners, solvents and cleaners IAW paragraph **7.2.** of this Instruction.

9.6.9. Tarpaulins and drop cloths used with oil based painting operations shall not be stored within buildings, but folded and stored in metal lockers that are detached and at least 15 feet from any building.

9.6.10. Approval by the Base Fire Chief is required before using flammable/combustible products for stripping or finishing wood floors. Before refinishing wood floors, eliminate all sources of ignition, including pilot lights for water heaters and appliances.

9.7. **Tar Pots and Kettles:**

9.7.1. Kettles for heating tar, asphalt, and similar materials shall be equipped with proper heat controls and means of agitation to assure controlled, uniform temperatures of the contents and prevent spot heating.

9.7.2. Do not operate tar pots or kettles inside of or on top of a roof, or within 25 feet of any building and ensure a competent operator overseas the operation. Provide a minimum of two 20lb multi-purpose (B, C) dry chemical extinguishers at the tar pot and at the area of tar application.

9.7.3. When the material is applied within buildings or enclosed areas, the atmosphere shall be free of dust and adequate ventilation provided to remove all smoke and fumes.

10. Fire Safety In Occupancies.

10.1. **Military Family Housing:**

10.1.1. The Base Housing Office shall ensure that each newly assigned military sponsor attends the Base Housing Fire Safety Orientation Briefing conducted at Building 510, Station #1 within five business days of occupancy of the residence. Family members are strongly encouraged to attend the briefing.

10.1.2. The sponsor of each family in MFH is responsible for maintaining the fire safe condition of their quarters.

10.1.2.1. It is expected and required that adult occupants exercise prudence in their own conduct and impose reasonable control on minors within their households. Do not leave any child under the age of 10 or any child incapable of self-care unattended in MFH.

10.1.2.2. Notify the Base Fire Department when the following conditions exist:

10.1.2.2.1. Invalids or persons with special medical problems are living in the residence.

10.1.2.2.2. When providing Family Childcare Services. ***NOTE:*** A special State of Delaware license is required.

10.1.2.2.3. Recreational small arms explosives are stored in the residence.

10.1.2.3. Do not use attics and basements as sleeping quarters. Maintain adequate access aisle space in these areas.

10.1.2.4. Sponsors and members of their families should practice "Exit Drills In The Home"

(EDITH). Make it a practice to conduct a fire drill when changing batteries in smoke detectors or at least twice a year. Fire Prevention Week on Wednesday night at 2000 hours (8:00 PM), is a nationally recognized time to do an EDITH.

10.1.2.5. As required, prominently display Fire/Police/Ambulance emergency stickers on all telephones.

10.1.3. Fire Reporting and Notification Procedures:

10.1.3.1. All fires will be reported to the Base Fire Department via **911**. This includes fires extinguished by the occupant.

10.1.3.2. Emergency Actions in the Event of a Fire:

Immediately alert all occupants to evacuate the building (single, duplex, and multiplex).

Ensure all persons are evacuated and away from the structure.

Report the fire to the Base Fire Department by dialing **911**.

As you leave, shut off the lights and close doors behind you.

Go to a designated meeting place outside. If someone is missing, notify the first arriving firefighter.

Once outside, never let anyone re-enter the building.

Notify all occupants in adjoining quarters.

10.1.4. Report fire emergencies by dialing **911**.

10.1.4.1. Provide the following information to the Emergency Dispatch Center when reporting a fire:

Location of the fire: Give the building number street number or name and the location of the fire if in a facility.

Nature or type of fire: Tell the Emergency Center Dispatcher what is on fire.

Injuries or persons trapped or unaccounted for.

Name of the person reporting the fire and a call back phone number.

Do not hang up until the Fire Alarm Communications Center Dispatcher tells you to do so.

10.1.4.2. After reporting a fire, wait outside to direct emergency vehicles to the location of fire.

10.1.5. Kitchen Fire Safety: Unattended cooking is the number one cause of fires in military family housing.

10.1.5.1. Grease fires in kitchens can normally be safely controlled at the start. Extinguish grease fires in skillets, broilers, and deep fat devices by covering with a lid. Keep a lid conveniently available for this purpose. Turn off the burner control as soon as possible. Do not attempt to pick up or move any type of container that contains burning grease.

10.1.5.2. Keep grease hoods and fans clean.

10.1.5.3. Keep combustibles at a safe distance from open flame areas. Do not place contact paper, plastic brick, and other material made of plastic on walls, ceilings or cabinet surfaces in family quarters.

10.1.5.4. A responsible member of the family will keep cooking appliances under visual supervision at all times when in use.

10.1.5.5. Do not place combustible decorations or knick-knacks near stovetops.

10.1.6. Open Flame Devices:

10.1.6.1. Keep matches, lighters, and other flame-producing devices out of the "strike zone" (normally three feet) of small children and out of children's play areas.

10.1.6.2. Do not leave open flame devices such as oil lamps, candles, etc unattended.

10.1.7. Barbecue grills:

10.1.7.1. Do not use inside buildings, on porches or on balconies. Grills (gas or charcoal) shall be located at least 25 feet away from combustible materials and 15 feet away from buildings or overhangs when in use.

10.1.7.2. Propane tanks will not be stored inside any facility, to include storage sheds.

10.1.7.3. Hot coals shall be quenched with water and covered with a noncombustible cover to prevent sparks or hot coals from being scattered by the wind after cooking has been completed.

10.1.7.4. Keep charcoal briquettes dry while being stored.

10.1.7.5. Barbecue devices shall be under the close supervision of an adult at all times when in use.

10.1.8. Smoking:

10.1.8.1. Do not smoke in bed.

10.1.8.2. Ensure smoking materials are doused with water and disposed of in an exterior trash container.

10.1.9. Explosives and Fireworks:

10.1.9.1. Storage of the following small arms components, in the following quantities, is the ONLY items permitted in MFH:

No more than 5lbs of black power in the original container may be stored.

No more than 1000 caps or primers may be stored.

No more than 2000 assembled rounds may be stored

10.1.9.2. Fireworks may not be bought, sold or used on DAFB IAW State of Delaware law.

10.1.10. Housekeeping:

10.1.10.1. Do not store materials in heater rooms or heater closets.

10.1.10.2. Accumulation of trash on floors or near buildings is prohibited.

10.1.10.3. Outdoor trash containers shall be a safe distance from the building and in approved containers.

10.1.10.4. Automotive tires will not be stored inside family quarters.

10.1.10.5. A minimum clear area of 36 inches around furnaces must be maintained.

10.1.10.6. Flammable storage, see Section **10.1.12.** of this Instruction.

10.1.11. Electrical Safety:

10.1.11.1. Only authorized electricians will perform electrical installation, repairs or change in electrical wiring, fittings or attachments for electrical appliances.

10.1.11.2. Use only electrical appliances and devices that bear the UL label or those listed by other approved testing agencies.

10.1.11.3. Extension cords and outlets: Extension cords shall be the same gauge or size as the wire of the appliance being energized (plugged in).

10.1.11.4. Do not hang anything from or attach anything to electrical cords, wiring or conduit.

10.1.11.5. Strongly recommend the use of UL approved power strips with safety fuses for computers, televisions and stereo components.

10.1.11.6. Plug no more than two electrical cords into one outlet on standard UL three plug extension cords.

10.1.11.7. Do not splice or hang electrical cords over nails or rafters in a manner which would constitute a fire hazard.

10.1.11.8. Do not place electrical cords under rugs, carpets or other combustible materials.

10.1.11.9. Do not use extension cords in lieu of permanent wiring and shall not run through walls, ceilings, floors, doorways, windows, or other similar openings.

10.1.11.10. All domestic-type washing machines, clothes dryers, vending machines, portable electric tools, and lights shall be electrically grounded IAW NFPA 70.

10.1.12. Flammable Liquids: Gasoline and other highly flammable liquids may not be stored in MFH quarters. The storage of fuel in containers or in power mowers, outboard motors, and similar equipment with fuel tanks shall be in an outside building or shed.

10.1.12.1. Items listed above, when placed within storage areas, shall be placed so that they will not be subject to mechanical damage.

10.1.12.2. Tightly close openings of small engine fuel tanks and the supply line to the engine shut off where a valve is provided.

10.1.12.3. Gasoline will only be stored in a safety can listed by a nationally recognized testing laboratory. A maximum of 5 US gallons, the combined total of all storage containers (including powered equipment tanks), may be stored.

10.1.12.4. No refueling will be conducted inside (including basements) or within 10 feet of any building, including garages, carports or attached right of ways.

10.1.13. Fire Protection:

10.1.13.1. Smoke detectors: Install a smoke detector in the hallway near the sleeping quarters. Wire this detector to the electrical system of the house. The occupant is encouraged to install battery-operated smoke detectors in attics, bedrooms and common areas.

10.1.13.1.1. The smoke detectors shall be inspected and tested monthly by the occupant.

10.1.13.1.2. Cleaning by going over the detector with a vacuum cleaner hose. This will prevent dust from causing a false activation.

10.1.13.2. Fire extinguishers: Provide a multi-purpose 2¾lb dry chemical fire extinguisher to each MFH unit. This is the property of the Base Housing Office and the specific unit. The extinguisher should be located in the kitchen. If the extinguisher requires servicing (needle in red on gauge), immediately take it to the Housing Maintenance building for replacement/ repair.

10.1.14. Christmas Trees in Military Family Housing:

10.1.14.1. Keep live Christmas trees outside the home and watered thoroughly until a few days before Christmas. Cut the bottom of the tree at an angle about one inch above the original cut, set it in water or wet sand and brace securely. Add water daily. Keep the tree away from radiators, stoves, and other sources of heat. The tree shall not be located near entrance or exit doors nor near any stairwell.

10.1.14.2. Precautions for all Christmas trees (including artificial trees): Artificial Christmas tree shall be rated by UL or FM and labeled as such. Use only UL approved electric lights that are in good condition, not worn or frayed.

10.1.14.3. Do not leave the Christmas tree lights burning when facility is not occupied or after retiring at night.

10.2. **Public Assembly:**

10.2.1. Managers of places of public assembly and recreational facilities shall establish a sound fire prevention program and shall ensure that employees are trained and understand their fire prevention responsibilities, fire reporting, facility evacuation procedures, first aid, and firefighting procedures.

10.2.2. Managers or assistants shall conduct closing inspections. Do not delegate this responsibility to janitorial personnel. A closing inspection checklist shall be prepared by managers and shall include the following:

All electrical kitchen equipment switches placed in the OFF position.

Portable electrically operated devices or appliances including amusement and vending machines not essential for after hours maintenance shall have the switches placed in the OFF position.

A noncombustible container with self closing lid shall be used in restrooms for the disposal of paper towels.

10.2.3. Designate personnel to check fire exits daily, before entry of patrons, to ensure that doors are unlocked and that panic type hardware and exit lights are functioning properly.

10.2.4. An inspection by Fire Prevention personnel shall be conducted prior to the start of any special social and/or unusual event.

10.2.5. Managers of facilities in which commercial or restaurant type cooking is performed shall establish and enforce the following procedures:

10.2.5.1. All installed grease filters and exposed surfaces of kitchen range hoods shall be cleaned daily to prevent the accumulation of grease. For kitchens in continuously operation, a spare set of filters is required.

10.2.5.2. Kitchen range hoods and exhaust ducts shall be cleaned at least every six months or as often as necessary to prevent accumulation of grease. Cleaning includes fans, roofs, louvers, exterior walls, cupolas, etc., and where the system exhausts to the outside. This is provided by contract services.

10.2.5.3. Managers shall maintain the following information on file for each range hood:

Date that the hood ducts and filters were last cleaned.

Name of contractor who serviced/cleaned system.

Date extinguishing system was checked serviced and by whom.

10.2.5.4. Ensure cooking is not permitted under a range hood without grease filter(s) installed.

10.2.5.5. Provide a metal clad cover for each deep fat fryer. Pre-position cover for immediate use in case of grease fire.

10.2.6. Do not use open flame devices in any assembly occupancy.

EXCEPTION 1: When necessary for ceremonial or religious purposes.

EXCEPTION 2: Candles may be used on tables if securely supported on substantial noncombustible bases, so located as to avoid danger of ignition of combustible materials. Candle flames shall be protected, i.e., glass globes.

EXCEPTION 3: Portable cooking equipment that is not flue connected shall be approved equipment fueled by small heat sources that can be readily extinguished by water, such as candles or alcohol burning equipment (including "solid alcohol"), provided adequate precautions to prevent ignition of any combustible materials have been taken.

10.2.7. Carpets, curtains, and draperies shall be fire resistant and/or treated for fire resistance. The Facility/Building Managers shall maintain certification of those items.

10.3. **Hospital/Clinics:**

10.3.1. The administration of hospital and limited care facilities shall have written copies of an Emergency Evacuation Plan for the protection of all persons in the event of fire, evacuation to areas of refuge and evacuation from the building when necessary. Periodically instruct all employees and keep them informed with respect to their duties under the Facility Fire Safety and Emergency Evacuation Plan.

10.3.2. The written Facility Fire Safety Plan shall include the use of alarms, transmission of alarms to the Fire Department, response to alarms, isolation of fire, evacuation areas, preparation of building for evacuation, and extinguishment of fire.

10.3.3. Fire exit drills shall be conducted quarterly on each shift to familiarize facility personnel (nurses, interns, maintenance engineers, and administrative staff) with signals and emergency action required under varied conditions. When conducting drills between 09:00 p.m. (2100 hours) and 06:00 a.m. (0600 hours), a coded announcement shall be permitted to be used instead of audible alarms.

EXCEPTION: The movement of infirm or bedridden patients to safe areas or to the exterior of the building shall not be required.

10.4. **Educational Facilities and Schools:**

10.4.1. Fire drills shall be conducted IAW Delaware State law.

10.4.2. All school fire drills shall simulate actual fire conditions; pupils shall not be allowed to obtain clothing after the alarm is sounded, even when in homerooms, due to the confusion that would result in forming the lines and the danger of tripping over dragging apparel.

10.4.3. Fire exit drills in schools shall not include any fire extinguishing operations.

10.4.4. Principals and Instructors Responsibility:

10.4.4.1. Ensure all exit facilities are checked daily to ensure that all stairways, doors, and other exits are in proper condition.

10.4.4.2. Schedule time for fire prevention classes/presentations with the Fire Prevention Section during Fire Prevention Week.

10.4.4.3. Provide an initial fire safety class at the beginning of the school year so all instructors and students understand the proper procedures to report a fire, use of the fire alarm pull stations, and the Evacuation Plan.

10.4.5. Smoking is not permitted within any DoD School or workplace. Ref. DoD Directive 1010.15*, Section 6, Smoke Free Workplace.*

10.5. **Child Care Facilities and Youth Centers:**

10.5.1. Child care and youth center facilities will conform to current fire safety codes.

10.5.2. An approved Fire Evacuation Plan shall be executed at least once per month.

10.5.3. Child-prepared artwork and teaching materials shall be permitted to be attached directly to the walls but shall not exceed 20 percent of the wall area.

10.6. **Warehouses and Storage Facilities:**

10.6.1. Storage shall not interfere with fire lanes or inhibit access to fire valves, fire hoses, fire extinguishers, fire escapes, fire exits or fire doors. Maintain a clearance of 18 inches minimum between sprinkler heads, ceiling, ceiling lights, electrical fixtures, and stored materials. Stacks more than 15 feet high or which contain hazardous materials shall not be piled closer than 36 inches to sprinkler heads.

10.6.2. Do not block doors and exits.

10.6.3. Maintain access aisles to provide convenient access to all portions of the storage areas. Access aisles shall not be less than eight feet in width.

10.6.4. For stacks up to 10 feet in height, provide cross aisles of not less than four feet in width. Where stacks exceed 10 feet in height, provide cross aisles at least five feet in width.

10.6.5. Combustible materials, such as excelsior, rags, and shredded paper, shall be stored in fire resistant bins with fusible link or self-closing doors.

10.6.6. Materials shall not be stored under or piled against building doors, exits or stairways. Combustible materials shall not be stored within 25 feet of any structure.

10.6.7. A 24-inch space shall be maintained between stored combustible materials and interior finish firewalls and partitions.

10.6.8. Containers, drums or other approved receptacles containing flammable liquids shall not be stored in general storage areas, but shall be stored in locations specifically constructed according to current directives for this type storage. This also applies to empty flammable liquid containers.

10.6.9. Keep packing materials in the original bales until used. Keep broken bales in metal lined bins with automatic self-closing covers. Do not allow waste from packing/unpacking or other sources to accumulate. Remove all waste outside daily, at the end of the workday/shift and disposed of in designated containers.

10.6.10. Floor sweeping compound shall be stored in metal containers with tight-fitting self-closing lids. Do not oil floors.

10.6.11. Do not use boiler rooms, utility rooms, and hot water heater enclosures for storage purposes.

EXCEPTION: One change of filters for heater/air handler is authorized.

10.6.12. Do not store materials under stairways and in stairwells.

10.6.13. Do not refuel or reservice gasoline-powered equipment inside any storage building.

10.6.14. Empty pallets shall be stored outside the building.

10.7. **Battery Shops:**

10.7.1. No person shall smoke or create sparks or open flames in battery shops.

10.7.2. All sources of ignition will be removed from the immediate area of battery vents, especially when hydrogen concentrations are present.

10.7.3. Electric facilities and spark producing equipment used in battery shops will conform to the provisions of the NEC.

10.7.4. Handle batteries with extreme caution to avoid sparks and other fire hazards.

10.8. **Aircraft Hangars:**

10.8.1. All aircraft hangars shall be designed to meet the requirements of the UFC 3-600-01, Uniform Building Code, and NFPA Standard 409*, Aircraft Hangars*, NFPA 101, and any Engineering Technical Letters that apply.

10.8.2. Clear space distance around aircraft hangars shall be a minimum of 50 feet. This area shall be clear and not be used for the storage or parking of aircraft or concentrations of combustible materials, nor shall buildings of any type be erected therein.

10.9. **Museum:**

10.9.1. Base museum may host special events, including lectures or recitals, exhibition openings, fund raising events, and private parties. The most striking similarity between these events is that the museum or space therein, is often used for a purpose for which it was not intended. Overcrowding, caterer's operations, highly combustible decorations, etc., often create hazardous conditions.

10.9.2. The Museum Director is responsible for ensuring conformance with all life and fire safety requirements, including the NFPA 101 and NFPA 914*, Fire Protection in Historic Structures*. Coordinators of special events should work closely with the Museum's Facility Manager to ensure fire and life safety considerations are met. Written rules and regulations governing the use of museum spaces for special events should be developed and as a minimum require.

10.9.2.1. Plans for special events showing the locations of tables, chairs, platforms, fences, bars, etc., be developed and carefully reviewed prior to the event, to prevent over crowding, exit blockage, introduction of hazardous materials, unsafe cooking appliances, and unsafe use of demonstrations.

10.9.2.2. Tables, plants, stages or other fixtures shall not visually or physically obstruct an exit, exit sign, or exit access. Temporary fixtures should not reduce the width of an exit passage.

10.9.2.3. Cooking and warming shall be performed in existing kitchen facilities. If kitchen facilities do not exist, only electrical warming devices should be allowed in an approved, closely supervised location.

10.9.2.4. Smoking and open flame producing devices are prohibited inside buildings.

10.9.2.5. A 10lb all-purpose dry chemical (ABC type) portable fire extinguisher shall be within 30 feet of any cooking, warming, or hazardous operation. Additional extinguishers may be necessary depending upon the nature of the event.

10.9.2.6. Demonstrations or experiments held within facilities shall not involve the use of any flammable, explosive or toxic materials.

10.9.2.7. Tents and canopies must be noncombustible or certified fire resistant.

10.9.2.8. Draperies, buntings, textiles, wood, and miscellaneous support and decorative materials used inside the museum must be fire retardant.

10.9.2.9. Electrical appliances, equipment, and wiring shall comply with NFPA 70.

10.9.2.10. Do not place wiring and cords across exit routes.

10.9.2.11. The sound indicating a fire alarm and location of exits shall be pointed out to guests prior to a performance or event. Key staff should be familiar with all exit routes and should ensure that exits are obvious, operable, and not blocked or restricted in any way.

10.9.2.12. The public shall be evacuated immediately from the building when a fire alarm is activated.

10.9.3. Before distribution of invitations, the event coordinator should determine the occupancy load and limit mailings to ensure the occupancy limit is not exceeded.

10.9.4. The number of occupants admitted to an event should be monitored and controlled.

10.9.5. Facility Managers should verify that existing electrical circuits are capable of handling electrical warming/cooking devices.

10.9.6. Staff should be aware of the location of handicapped visitors during an event and should be able to assist in evacuating them from the building during a fire alarm.

10.10. **Securing Buildings at Close of Workday:**

10.10.1. Closing inspections of all public assembly facilities are conducted and reported to the Base Fire Department within one hour of closing by authorized personnel. Managers shall provide a letter listing personnel authorized to close a facility. Do not delegate this responsibility to janitorial personnel. Failure to report closing shall be reported in writing to the commander concerned.

10.10.2. All doors, including fire doors and windows shall be secured properly at the close of working hours unless exempted in writing by the Installation Commander or authorized representative.

10.10.3. Disconnect unnecessary electrical appliances at the end of the day.

10.10.4. Do not secure exit doors in any manner that would prevent their use as an exit when the building is occupied.

10.10.5. Keep mops, cleaning gear, and other material subject to spontaneous ignition outside of buildings or stored in metal containers with tight-fitting metal covers.

10.10.6. Remove unused paints, brushes, drop cloths, rags, and like items from buildings at the close of the workday. An exception is paint shops, where full precautions are taken daily to store paints and related supplies. Place any material left at the job site in a metal container with tight fitting self-closing lid and placed at least 15 feet from the building. Remove trash and other waste material daily.

10.10.7. Remove or place in metal container with tight fitting, self-closing lid soiled rags used in connection with repair shops, painting or other such operations.

JOHN I. PRAY, JR., Colonel, USAF
Commander, 436th Airlift Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Department of Defense directive 1010.15, *Smoke Free Workplace*

Air Force Instruction 23-201, *Fuels Management*

Air Force Policy Directive 32-20, *Fire Protection*

Air Force Instruction 32-2001, *The Fire Protection Operations and Fire Prevention Program*

Air Force Instruction 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standards*

AFOSH 91-5, *Welding, Cutting, and Brazing*

AFOSH 91-38, *Hydrocarbon Fuels*

AFOSH 91-67, *Liquid Nitrogen and Oxygen Safety*

AFOSH 91-68, *Chemical Safety*

AFOSH 91-119, *Process Safety Management (PSM) of Highly Hazardous Chemicals*

Air Force Manual 91-201, *Explosives Safety Standards*

Air Force Joint Manual 24-204(I), *Preparing Hazardous Materials for Military Air Shipments*

Air Force Joint Manual 24-209, *Storage and Handling of Hazardous Materials*

Air Force Joint Manual 24-210, *Joint Service Manual (JSM) for Storage and Material Handling*

Air Force Joint Manual 24-227(I), *Storage and Handling of Liquefied and Gaseous Compressed Gasses and Their Full and Empty Cylinders*

Military Standard 129, *Standard Practice for Military Marking*

Dover Air Force Base Security Instruction 32-3, *Hazardous Waste, Universal Waste, and Used Petroleum Management Plan*

Unified Facilities Criteria 3-600-01, *Design: Fire Protection Engineering for Facilities*

Uniformed Building Code

International Building Code

Nation Fire Protection Association Standard (NFPA) 1, *Fire Prevention Code*

NFPA 10, *Portable Fire Extinguishers*

NFPA 13, *Installation of Sprinkler Systems*

NFPA 14, *Standpipe, Private Hydrant, and Hose Systems*

NFPA 15, *Water Spray Fixed Systems*

NFPA 30, *Flammable and Combustible Liquids Code*

NFPA 33, *Spray Application Using Flammable or Combustible Materials*

NFPA 45, *Fire Protection for Laboratories Using Chemicals*

NFPA 50A, *Gaseous Hydrogen Systems at Consumer Sites*

NFPA 51, *Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*

NFPA 51B, *Welding, Cutting, Other Hot Work*

NFPA 55, *Compressed and Liquefied Gases in Portable Cylinders*

NFPA 58, *Liquefied Petroleum Gas Code*

NFPA 72, *National Fire Alarm Code*

NFPA 70, *National Electric Code*

NFPA 70B, *Electrical Equipment Maintenance*

NFPA 70E, *Electrical Safety Requirements for Employee Workplaces*

NFPA 77, *Static Electricity*

NFPA 96, *Ventilation Control and Fire Protection of Commercial Cooking Operations*

NFPA 101, *Safety to Life from Fire in Buildings and Structures*

NFPA 220, *Types of Building Construction*

NFPA 385, *Tank Vehicles for Flammable and Combustible Liquids*

NFPA 409, *Aircraft Hangers*

NFPA 430, *Liquid and Solid Oxidizers*

NFPA 484, *Combustible Metals, Metal Powders, and Metal Dust*

NFPA 495, *Explosive Materials Code*

NFPA 704, *Identification of the Hazards of Materials*

NFPA 914, *Fire Protection in Historic Structures*

Code of Federal Regulations (CFR) Title 10, Part 20

CFR Title 14, Part 103

CFR Title 26, Part 1910.101, 102, 103, 104, 105, 106, 111, 1046

CFR Title 29, Part 1910.96, 106, 1200

CFR Title 29, 1926.53

CFR Title 40, Part 152

CFR Title 49, Parts 100 to 180, Transportation

American Society of Mechanical Engineers, Boiler & Pressure Vessel Code

Technical Order 00-25-172,

Technical Order 36-1-27,

Technical Order 38-1-23,

Compressed Gas Association Pamphlet C-6-1968

Compressed Gas Association Pamphlet C-8-1962

Compressed Gas Association Pamphlet P-1-1965

Abbreviations and Acronyms

AAFES—Army and Air Force Exchange Service

AFI—Air Force Instruction

AFOSH—Air Force Occupational Safety and Health Standards

AFPD—Air Force Policy Directives

CE—Civil Engineers

DAFB—Dover Air Force Base

FACC—Fire Alarm Communications Center

FM—Factory Mutual Laboratories

FSD—Fire Safety Deficiencies

IBC—International Building Code

MFH—Military Family Housing

NAF—Non-Appropriated Funds

NFPA—National Fire Protection Association

OSHA—Occupational Safety and Health Administration

TLF—Temporary Living Facility

TO—Technical Order

UBC—Uniform Building Codes

UL—Underwriters Laboratories

UFC—United Facilities Criteria

VAQ—Visiting Airman Quarters

VOQ—Visiting Officer Quarters

Terms

Accessible Means of Egress:—An accessible means of egress is a path of travel that is usable by a person with severe mobility impairment and that leads to a public way or an area of refuge.

Exit:—That portion of a means of egress that is separated from all other spaces of the building or structure by construction or equipment as required to provide a protected way of travel to the exit discharge. Exits include exterior exit doors, exit passageways, horizontal exits and separated exits or ramps. For more details, consult the NFPA 101.

Facility/Building Manager:—A facility manager is the person who signs a receipt for any facility under their jurisdiction. Each Facility/Building Manager is responsible for the fire safe conditions of the facility and equipment under his/her control.

Fire Hazard:—Any situation, process, material or conditions that, based on applicable data, may cause a fire or explosion or provide a ready fuel supply to augment the spread or intensity of the fire or explosion and that poses a threat to life or property.

Fire Safety Deficiency (FSD): —A condition (including noncompliance with standards) that reduces fire safety below acceptable levels, but by itself does not ordinarily cause a fire. FSDs often accelerate or contribute to the spread of fire.

Fire Detection System:—A system designated to detect the presence of fire and (or) smoke. Visual and (or) audible devices notify building occupants, and send a signal to the Base Fire Department.

Fire Door:—An internal door installed in a building to separate sections or certain areas to prevent damage by heat or smoke in the event of a fire. Designed to meet the special criteria and certified by an appropriate testing organization.

Fire Suppression System:—A system designed to respond to the presence of fire and discharge extinguishing agent to control or extinguish the fire while sending a signal to the Base Fire Department.

Hazard Abatement:—To eliminate or reduce a safety, fire, or health hazard in compliance with *AFI 91-301, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standards*.

Risk Assessment Code (RAC):—A RAC is an expression of degree of risk in terms of hazard severity and mishap probability. Fire, Safety or Bioenvironmental Engineering personnel assign RACs.

National Fire Protection Association (NFPA):—An independent and nonprofit organization whose mission is safeguarding the environment from fire using scientific and engineering techniques and education. Develops codes and standards that are used by the US Air Force.

Attachment 2

FACILITY MANAGER MONTHLY FIRE SAFETY CHECKLIST

FACILITY NUMBER:

USING ORGANIZATION:

	Yes	No	REMARKS
ADMINISTRATION / TRAINING			
Is there a written EMERGENCY ACTION PLAN?			
Are all personnel familiar with fire reporting procedures as specified by the Emergency Action Plan?			
Have personnel completed fire extinguisher Training? Records on file?			
Emergency Evacuation Floor Plans Posted?			
Are 911 Phone Stickers on all phones?			
Are copies of outstanding AF Form 1487 and AF Form 332 on file for previously identified fire hazards?			
EGRESS HAZARDS			
Exit signs provided?			
Are lighted exit signs working?			
Are exits unlocked when facility is occupied?			
Are exits with panic hardware latching type doors operable?			
Are any egress doors blocked?			
Are all hallways, aisles, or lanes kept clear of obstructions?			
Are emergency evacuation lights working?			Test required and recorded monthly by Facility Mgr
FIRE PROTECTION SYSTEMS			
Is the Fire Alarm Panel showing any system(s) inoperable or in trouble?			Report immediate to FACC ex 4401
Are fire protection panels, control valves, fire department connections etc. are not blocked?			
FIRE EXTINGUISHERS			
Are Fire extinguishers in correct location?			

Have fire extinguishers been inspected annually, monthly and are current?	See DAFBI 32-2001 for inspection guidance.
Is any fire extinguisher blocked or inaccessible?	
STORAGE HAZARDS	
Is there any storage or equipment in or under stairs?	
Do the storage arrangements provide clear correct spacing for isles, fire lanes, etc?	
Are mechanical rooms clear with no storage except one change of air filters for the HVAC system?	
Are Hazardous Materials stored properly?	
Is the clearance under sprinkler heads a minimum of 18 inches?	
ELECTRICAL HAZARDS	
Are extention cords approved types and being used correctly? (Not being used in lieu of fixed wiring, run under doors, through windows etc)	
Are surge protectors used for computer equipment only?	
Are unnecessary electrical appliances or equipment disconnected at the end of the day?	
Is there any make shift wiring, frayed plugs, broken outlets?	
HEATING HAZARDS	
Is heating equipment working and in good condition (no fuel leaks on burners)?	
If temporary an electric heater is being used: does it have the proper clearance of 3 feet from combustibles and is directly plugged into a single electrical outlet?	
FLAMMABLE LIQUIDS/ HAZMAT	
Are approved flammable storage lockers being used and in good repair?	
Do storage limits exceed the authorized limits of flammable or combustible liquids?	
Are authorized flammable liquids being used for cleaning purposes?	

Are solid rags being stored in approved storage containers with self closing lids?	
GENERAL HOUSEKEEPING	
Are trash cans emptied every night?	
Are Lawn mowers / small gas equipment tanks drained prior to storing?	
SMOKING MATERIALS	
Are designated smoking areas used IAW the base smoking plan?	
Is proper disposal equipment available?	

Facility Manager (Print)

Facility Manager Signature

Date Accomplished